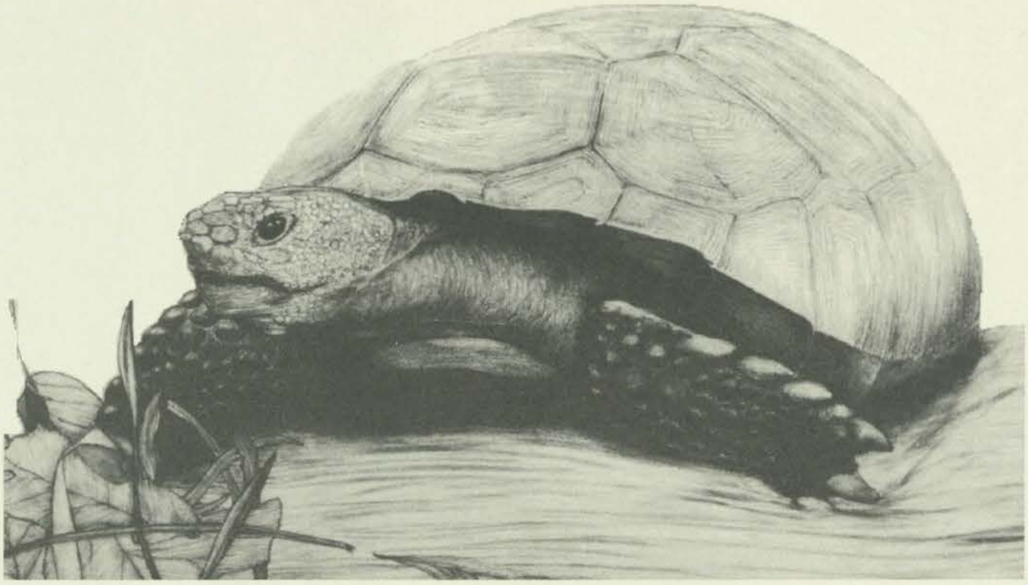
# FLORIDA WILDLIFE®

Volume 46, Number 4

July-August 1992



STEVEN LEWIS

*Gopher Tortoise (**Gopherus polyphemus**)*

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**Florida Game and Fresh Water Fish Commission**

# FLORIDA WILDLIFE®

Volume 46, Number 4

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Fish Commission 1992

Publisher

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*The gopher tortoise digs its burrows in Florida's high, dry, sandy soils — the same habitat sought by our state's expanding human population. Read about the gopher's plight beginning on page 32.*

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## Covers

Linda Thompson's watercolor of manatees won our 1992 Cover Art Contest. Read how you can receive a free print of this fine work, and take a look at some other outstanding entries beginning on page 27.

Printed on recycled paper.

*Vanishing Florida*

# Reflections of the Past

By Lt. Roy L. Brown

"Mr. Percy" has hunted, and lived, by a code of ethics since the1920s.

As I stood next to the white-haired gentleman, I knew I was in the presence of a true sportsman — a man who lived by a code of ethics, a conservationist who loves Florida.

Percy Wheeler, "Mr. Percy" to most, was born almost a century ago in Hillsborough County in 1902. He grew up in the community of Cork and later moved to Dover, five miles away, where he owned and managed the Dover Cash Store for 37 years. Managing the small general store allowed him the flexibility to pursue what he loved most — hunting.

Mr. Percy began hunting in the early 1920s with his father. The two would spend leisurely days hunting the Hillsborough River swamp in northern Hillsborough County.

"In those days you could hunt just about anywhere. Fences were few, and folks didn't mind you hunting on their property as long as you respected the privilege," he said.

He recalled hunting with his good friend, and member of the Game and Fresh Water Fish Commission, Cecil Webb, on 13,000 acres in northern Hillsborough and southern Pasco counties. Mr. Percy said the quail hunting was excellent in those days, and that the two of them enjoyed it immensely.

"Watching the dogs work a covey of quail, the excitement of the flush, and Cecil's companionship left me with life-long memories," he said.

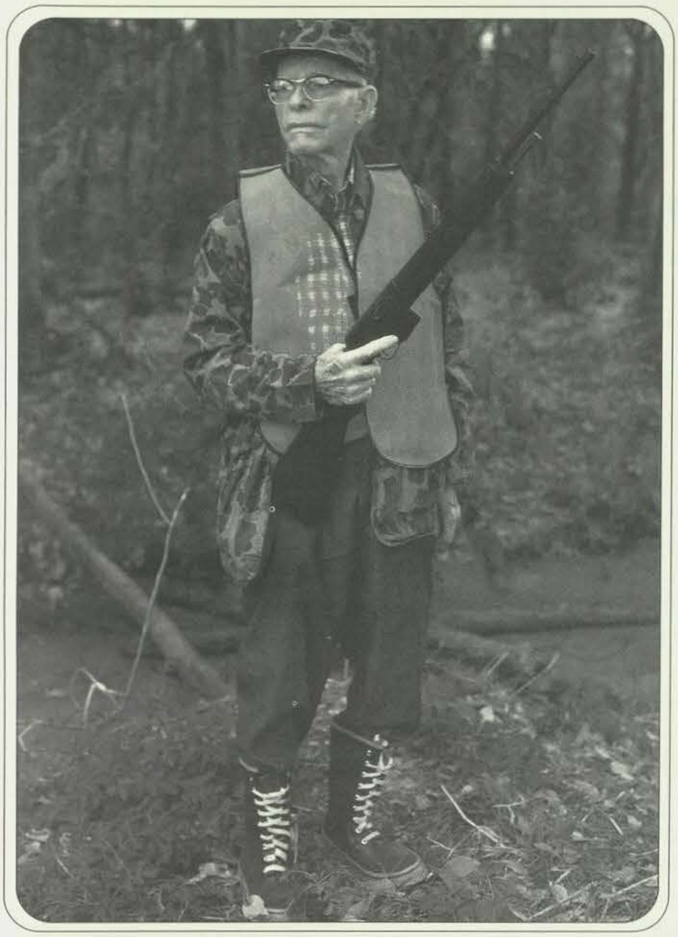
Mr. Percy's admiration for Webb was justified. While a Commissioner in the 1940s, Webb was instrumental in implementing a plan for cooperative use of private lands for public hunting. In fact, one of the Commission's oldest wildlife management areas, in Charlotte County, was named for him in 1953. During his tenure, the Commission set up a statewide radio network and successfully increased populations of wild turkey and deer in Florida through a trapping and restoration program.

Mr. Percy began hunting south Florida's Big Cypress area in the early 1940s with Charlie Osceola, a descendent of the Seminole chief, Osceola.

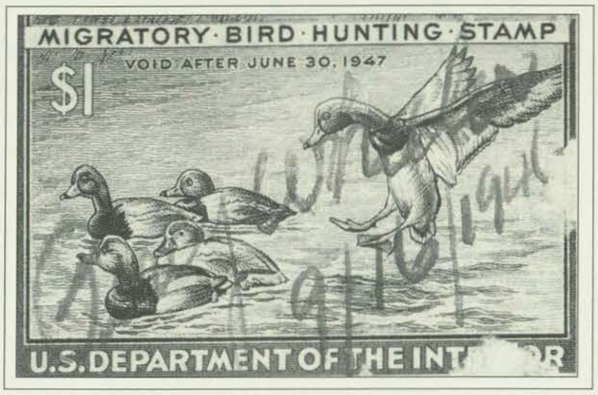
"Back then, the Big Cypress Swamp seemed to go on forever," Mr. Percy said. Lush vegetation grew thick and seemed like a jungle. Charlie guided for me and knew the area. He kept me from getting lost."

When the Ocala National Forest opened for hunting, Mr. Percy began traveling there instead of to south Florida. He continues to hunt the forest as his health allows. It's not uncommon during deer season to see this Floridian heading to his stand with his .351 Winchester carbine in hand, his florescent orange hat and vest making him safely visible as he walks along. He believes the use of hunter orange saves lives and always wears it when in the field.

Our conversation turned to the numerous hunting and fishing licenses he had purchased over the years. To my surprise, he presented me with several licenses from the 1940s. I thanked him



LT. ROY L. BROWN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WILLIAM A. GREER

*(above) Mr. Percy has bought many licenses and stamps over the years. He gave a few old ones to the author.*

*(left) Even at 90 years of age, Mr. Percy goes hunting as his health allows.*

for the historic gift and examined each one closely. A hunting license cost $7.50 in 1945. I remarked to Mr. Percy that the price seemed expensive for that time. He agreed and said that a lot of folks didn't buy them for that reason, but he did. He knew the money was for a good cause, which helped ease the financial pain, and he would not hunt with anyone who didn't have a license. He said there was a code of ethics that he and his hunting buddies lived by: "You didn't hunt on Sunday, you bought a hunting license, you ate what you shot, and you never killed illegal game."

Mr. Percy has gathered many interesting hunting stories over the years. One that he particularly enjoys telling took place during the 1930s. Four of his friends wanted to go hunting in the Gulf Hammock area of Levy County, years before it became a wildlife management area. Two of the friends were doctors, and the other two were business acquaintances. Mr. Percy said none of the four knew much about the woods, so he cautioned them not to get lost traveling to and from their deer stands. He put each on a stand early one morning, and by noon all but one had returned to camp. They began searching that afternoon but had to give up at dark.

Early the next morning, they resumed the search. The other three would not let Mr. Percy out of their sight, for fear that they too might get lost. Late that afternoon, he located the tracks of the lost friend at the edge of a small pond he had circled about six times before heading to higher ground. When finally located, the lost companion was hugging a pine tree and would not answer when called. Mr. Percy said the experience of being lost and feeding the mosquitoes all night must have been too much for his friend. After being assured everything was all right, he shortly recovered, but he never asked to go back to Gulf Hammock!

Mr. Percy has seen the rules and regulations pertaining to wildlife change over the years due to the increase in the human population and the decrease of good wildlife habitat. He recalls when panther, bear, red fox and gray fox were plentiful and not protected. He feels that it's especially important today for every sportsman to do his part by obeying the laws that protect game and fish.

"Take only what you can use, so something will be left for future generations. They deserve the same opportunities to enjoy Florida's natural resources," Mr. Percy said.

Mr. Percy believes that hunting and fishing builds strong character in youth, and that if you go hunting *with* your child, you might not have to go hunting *for* your child.

Although my contact with Mr. Percy over the past few years has been limited, I will always remember the strong principles by which this man lives. He is typical of the true Florida sportsman. ◆

*Lt. Roy L. Brown is a law enforcement staff supervisor and nuisance alligator coordinator in the Commission's Northeast Region.*

# The Irresistible Dough Ball

By David Brown

Sometimes, life is more enjoyable when we ignore the vast technological advancements of modern times and get back to the basics.

Fishing with dough balls is a classic example of this premise. The highly commercialized artificial bait market is literally flooded with lures designed to simulate virtually every creature in the water. It's a wonder fish don't become so confused that they stop eating altogether. Of course, this isn't likely to happen. Still, most anglers have experienced times when it seems no lure evokes even the slightest interest from their finned quarry.

The obvious solution to such fishing lulls is to switch to what anglers call "naturals." Be they shiners and crayfish for largemouth bass, or plump red wiggler worms for bluegill and shellcracker, baiting a hook with what is already in or near the water is usually a consistently foolproof way to produce good catches.

But those who are interested in more than simply catching the largest stringer of the fattest fish in the shortest amount of time can add a unique facet to their angling experience by reviving the oft-forgotten practice of kitchen bait-making.

For many fishermen, a lazy stroll down memory lane will recall the days of mixing a handful of all-purpose flour and a few tablespoons of water into a soft, sticky concoction that had the fish standing in line for a bite.

Yes, the days of the dough ball may be little more than childhood memories for much of the angling world, but when nothing else seems to work, or even if all else is working, a small, white glob suspended beneath a bobber can do wonders.

"I don't believe there's a fish in the water that can resist a dough ball," said Curtis Weatherington of Lake Hamilton, in Polk County.

Weatherington, who has fished in Florida's fresh and saltwater bodies for more than half a century, said he has always had great success catching bait fish and "eating" fish alike with dough balls.

"But just why fish tend to strike at dough balls is a mystery that has long eluded the angling world," said Joe Brown of Tampa. " The flour-and-water mixture is very low in protein."

Brown, who owns A-24 Hour Bait and Tackle, frequently experiments with bait in area lakes and rivers. He said the effectiveness of dough balls doesn't surprise him because he has caught fish on everything from slivers of bath soap to tin foil.

Allen Smith, owner of Cypress Bait and Tackle in Winter Haven, speculated that the alien appearance of dough balls, along with the way the bait slowly disintegrates in the water,

Fishing with dough balls evokes fond memories of childhood – and it's a great way to catch fish.

may have something to do with its fish appeal.

"It could be the little flakes breaking off that the fish try to get their mouths on," Smith said.

Unlike the chemically complex makeup of most synthetic baits, there really isn't much in the way of ingredients for the modest dough ball. But despite their simple composition, some interesting variations exist.

The standard recipe originates from about one-half cup of all-purpose (not self-rising) flour and just enough water to make it stick together. Many anglers stop here and simply stick a glob of the raw dough on a hook.

But in this form, the bait usually does not last long. For, as anyone who has fished in bluegill-infested waters can attest, panfish have an annoying and well-deserved reputation as bait-stealers.

So, to make the bait a bit more difficult for small mouths to steal, put the dough mixture in a microwave oven for about 30 seconds. Unlike the slow process of baking, a quick zap in the microwave will cause the dough to gel together with a rubbery consistency that can be molded easily and will adhere to a hook.

Weatherington said a 10-second drop in a frying pan will yield similar results. Also, kneading strands of cotton into the dough will give added consistency.

Despite the advantages of homemade dough, some modern anglers prefer to bypass the creative process and simply wad up small pinches of store-bought white bread. This practice is certainly not in vain, but neither is it without drawbacks.

For one thing, baking results in hundreds of tiny air bubbles in the loaf which can cause the bread to fall apart quickly in the water. But more importantly, by using a pre-made product, the angler misses out on the fun of creating and using his own bait.

Although some believe the flour-and-water mixture is sufficient, others prefer to add a little something extra to give their bait a more interesting odor.

The aromatic appeal of dough balls can be greatly enhanced by adding certain spices, particularly onion or vanilla, to the mixture. Also helpful are a few drops of oil-based salad dressings, which create a scent trail that lingers in the water.

There is little data available to indicate which ingredients fish prefer. However, the objective is not to create an award-winning flavor, but simply to improve the chances of the fish homing in on the smell of a dough ball if they don't actually see the bait.

A quick way to test the effectiveness of dough balls is to chum the surface. By tossing a handful of tiny dough bits into the water, anglers can usually see whether or not the bits are devoured as they slowly descend.

Also, as Smith said, chumming often induces feeding activity as the fish taste something out of the ordinary, ▷

PAINTING BY DAVID BOLLMAN

then search madly for more of this new food source.

"Standing on the dock in my backyard, I throw bread balls to the bluegill, and when one shows up, nine or 10 more appear," he said.

"Chumming with bread balls is popular with commercial shiner fishermen," Smith added. "They use bread balls to attract shiners. And when they throw the nets they sometimes get bluegill and nile perch too." [**Editor's note**: Anglers who catch bluegill in this manner must release them unharmed into the water. Possessing nile perch caught in this manner is permitted in the Central and South regions only.]

Despite this apparent popularity, dough balls, like any other bait, occasionally fail to impress the fish, and portions of the bait go unused. That's when the low-cost advantage of dough balls is magnified by the bait's longevity.

Unlike most live baits, unused dough can be safely kept for future use by simply wrapping it in wax paper. A few drops of water and another 10 seconds in the microwave will rejuvenate the leftover bait.

The classic rig for dough ball fishing is a 10- to 12-foot cane pole tied with 6- to 8-pound-test line. If a cane pole is not available, an ultralight spinning outfit will suffice. Such outfits supply the backbone necessary to subdue even a "two-hand" bluegill, while allowing enough flexibility for the sport of a good fight.

Typically, hook sizes are in the No. 2 to No. 4 range, with larger ones used for quarry other than panfish. Suspend the hook a foot or so beneath a small bobber or wine cork, and affix the line with only the tiniest of lead weights, if any at all.

Since most dough ball fishing is done in shallow, still water, heavy weights are not needed and would only cause an unnecessarily loud splash that would spook the fish. Also, for chumming, free-lined dough balls more closely resemble those drifting nearby.

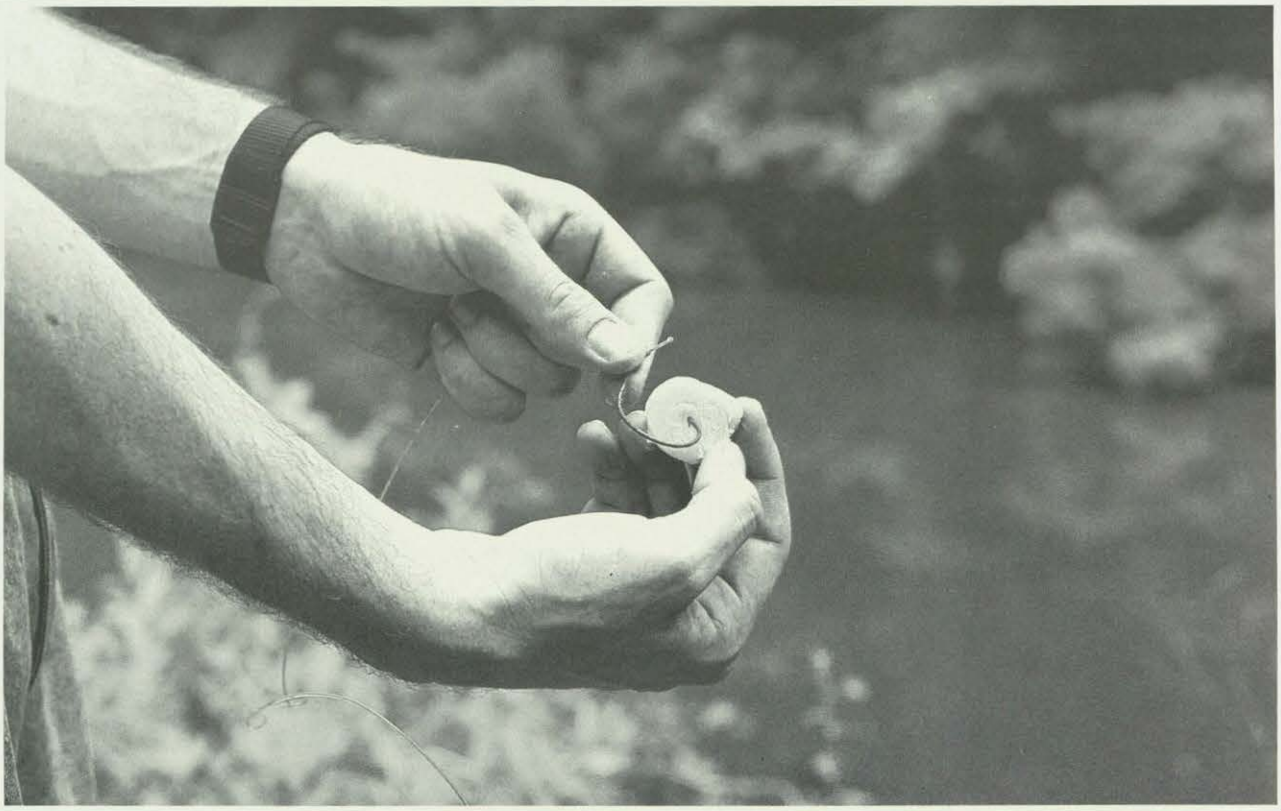
Dough ball fishing is effective in most any freshwater body, and even a few saltwater areas, where the water is calm enough to drift the lightweight bait. However, you'll get the best results near shoreline vegetation, such as lily pad beds, and beneath overhanging tree limbs where shadows create safe havens in which fish often hide.

It would be a grotesque disservice to both serious fishermen and casual anglers to endorse dough balls as legitimate trophy-bass baits. Actually, the white wonders are most often created with panfish, catfish and the occasional bowfin in mind.

However, on any given day, any fish, large or small, with a rumble in its belly is apt to eat anything that doesn't eat it first. Therefore, by putting a foreign substance in the water and gambling on which species will gobble it up, the angler focuses on the first and most important word in the phrase "sport fishing."

And that's what recreational angling is all about – sport, not overkill. ◐

*David Brown is a sports editor for the* ***Tampa Tribune****. Fishing and writing about it are his main hobbies.*



*A quick zap in the microwave will cause the dough to gel and adhere to the hook better.*

PEGGY PERKERSON

# Sunshine State Catfish

Text and Photographs by
Carolee Boyles-Sprenkel

If the lazy days of summer make you yearn for a rod and reel in your hand, but high-tech bassin' leaves you cold, and bream are too bony for you to eat, then rediscover catfish. They're plentiful, easy to catch and good for the table. Best of all, it's an excellent way to introduce youngsters to a relaxing day of fishing on your favorite river or lake.

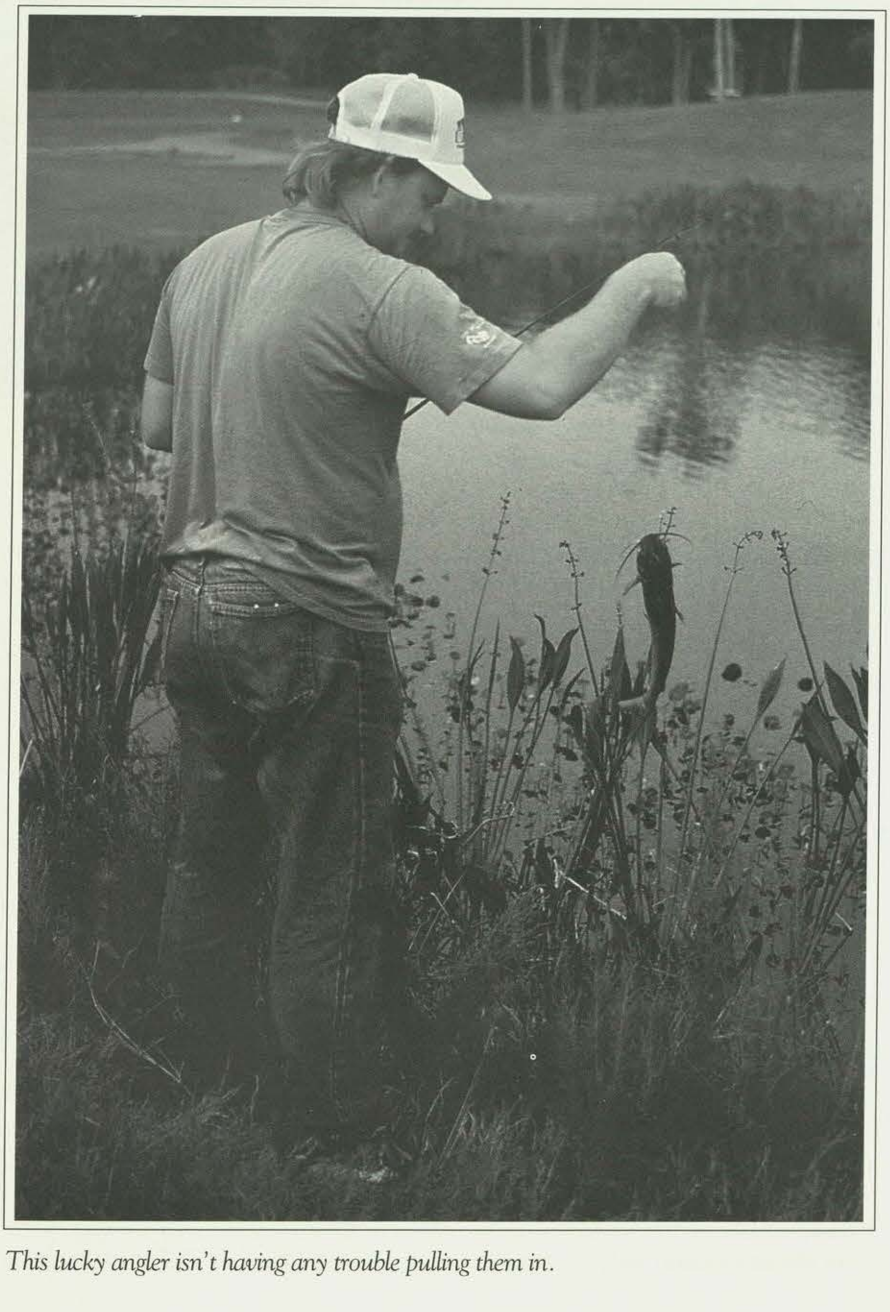
The most popular species are the channel cat and the white cat, favored for their good eating. The flathead catfish, a relative newcomer to Florida waters, is also sought for the table. But other catfish species, including blue catfish and yellow, brown, black and spotted bullheads, inhabit many Florida lakes and rivers. Walking and armored catfish, both exotic species, occur in some south Florida waters, according to fisheries biologist Frank Morello, but he doesn't know of many people eating them.

"Some folks may like them, but they're too ugly for my taste," he said.

Norman Young, a fisheries biologist with the Commission's DeFuniak Springs office, said Florida rivers are generally better for catfish than still ponds.

"Catfish like moving water," Young said. "They also like some kind of 'den' — a stump hole, a hole in a rock wall."

Many of our rivers provide an excellent mix of those conditions. Young considers the Apalachicola River the best all-around fishery for wild catfish. ▷



*This lucky angler isn't having any trouble pulling them in.*

"At times, the catfish population will explode," he said. "Maybe every five to seven years it will peak, and fishing will be extremely good. When we ran creel surveys over there from 1978 to 1982, the population just started going up and up and up."

The catfish population was high in 1980 and again in the mid- to late-'80s. That means the river is due for another peak soon, but no one can say for certain whether that will happen in 1992.

In addition to the wild catfish populations in the state, the Commission provides a put-and-take fishery of catfish in a number of managed impoundments. In north Florida these include lakes Stone and Victor and Bear, Hurricane, Juniper Bay and Karick lakes. Saddle Creek in Lakeland is periodically stocked. Young said biologists also may put some catfish fingerlings in Merritt's Mill Pond this year. The fish, all channel cats, are reared at Commission hatcheries.

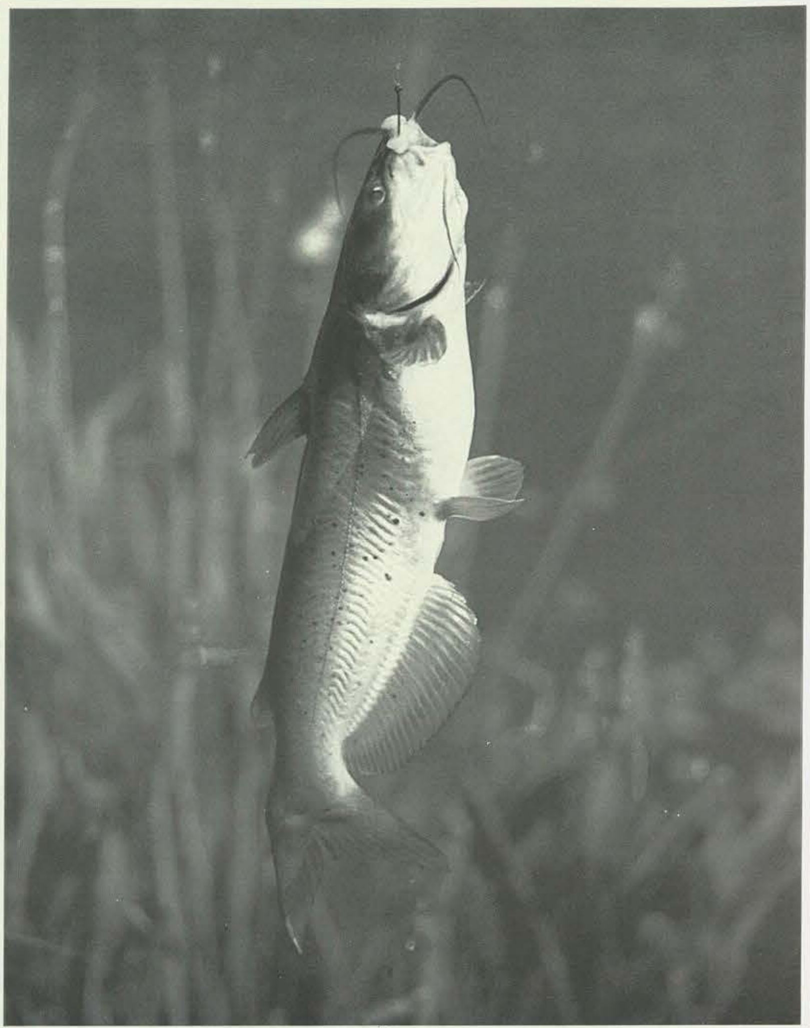
In south Florida, as in Jacksonville, Orlando and around Tampa, biologists stock a number of small lakes through the urban ponds program. These include Tropical, Plantation Heritage, Devoe and Caloosa lakes and Lake Okeeheelee.

According to Young, catch rates are fairly high on put-and-take fisheries.

"That's why we have bag limits on catfish on those fish management areas. That spreads the fishing out for a period of time. We stock the urban ponds several times a year, and we'll have to restock the other lakes five to seven years down the road," he said.

Daily bag limits range from six fish on Hurricane Lake to 10 on many other lakes. Translation: *check the bag limits and other special rules before you go.*

Tactics for catching catfish are as many and varied as fishermen themselves. Most anglers use some kind of bottom rig. Those who believe life without catfish isn't worth living go to more efficient means, such as a trotline.



*A mess of catfish this size will make a nice meal by any standards.*

Carl White has been fishing for catfish for 16 of his 26 years. He started out fishing in Iowa and South Dakota before he moved to Florida six years ago. He's done most of his Florida fishing in the Ochlockonee River, where he thinks the action is best when the river is high following heavy rains.

White looks for the deepest water in the area he's fishing. "Usually around bends, there's a deep area — like holes. Look for a few logs in the water; that's where the fish are. The best fishing is in the nighttime, from about 10 to 3. And then early in the morning they'll start biting again, just when it starts getting light."

White uses a standard bottom rig. He threads an egg weight onto his line and ties a swivel below that. Then he attaches a leader about 20 inches long.

"When you cast, leave a little slack in the line," he said. "Then when the fish takes it, there won't be any resistance. The line will just go through the weight, but it will still be in the spot where you cast it."

Butch Geary is a Florida catfish fisherman of long standing. He's fished all over the state and in Idaho, Arkansas and Alabama for most of his 45 years. He's from a real "fishing" family — his 103-year-old grandmother, Sadie White, still goes fishing any time someone will take her. (See "Bristol's Bream Lady," July-August 1991.)

Geary agrees with Young that the Apalachicola River is the best catfish river in north Florida.

"If I'm fishing for small channel catfish, I'll find the edge of a channel with a good flow of water, but not a real hard flow, and a depth of 4 to 6 feet," he said. "If they're not where they ought to be on that sand bar, I just move out a little deeper.

"If you haven't gotten a bite within 10 minutes, you might as well pick up and move. Either they're not there, or they aren't in a feeding mood. You may not have to move more than 50 to 100 yards up the river," he said.

Like White, Geary uses a slip weight and a swivel with a leader. He prefers a shorter leader, though, usually 16 inches or less. "It depends on how they're feeding. If they're real fussy, I may go up to a 14- or 16-inch leader. Sometimes I'll get by with an 8-inch leader."

Geary uses everything from wigglers and mussels to live shad and shiners for bait. He also finds catalpa worms — sphinx moth larvae that feed on catalpa trees — a very effective bait. He pinches off the head of the caterpillar, then turns it inside out on the hook with a match or small stick.

"If he's fully grown and you turn him right, he'll draw up to about a half-inch long," Geary said.

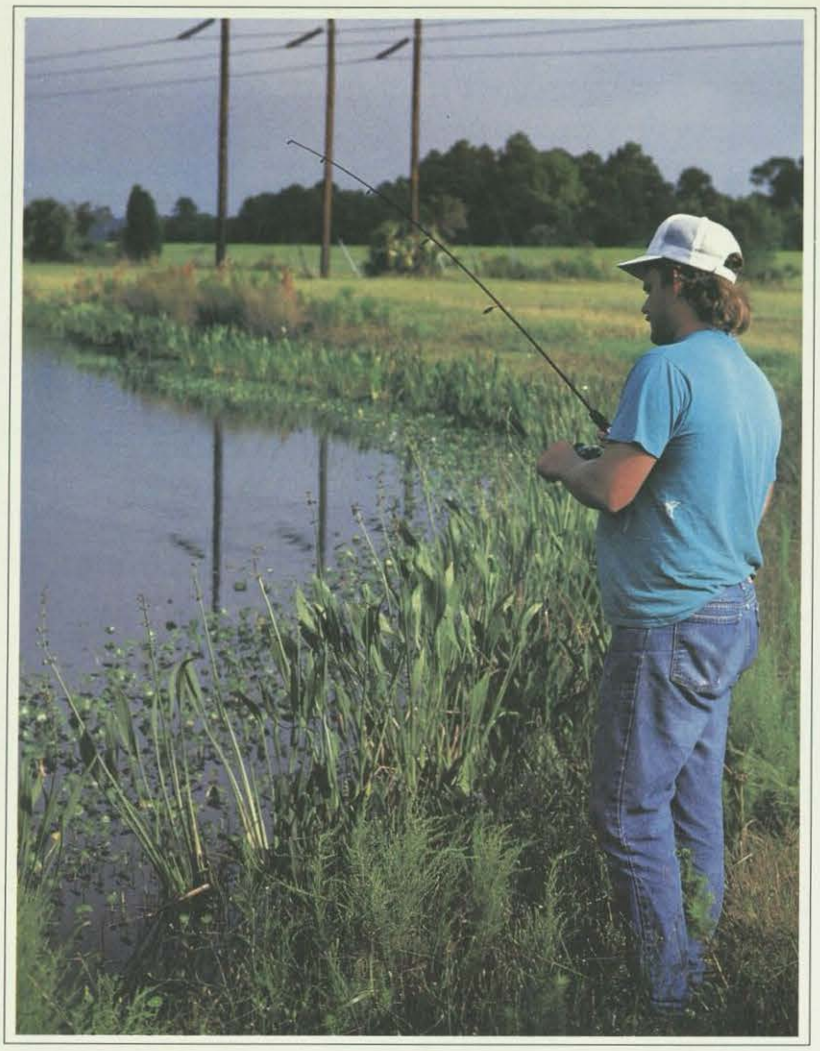
Claude Hilton, a long-time catfisherman, has fished for nearly 20 years on Lake Seminole, mainly using a trotline. He said the depth of Lake Seminole makes it good trotline water.

"It's not deep, and it's easy to put a trotline out and take it up," he said.

During the early summer, he always puts his trotline out in what he calls "the flats," areas where the water is 9-10 feet deep.

He rigs each trotline by tying plastic jugs on both ends of the main line so it will be easy to find. He also anchors each end of the main line so the rig won't drift. Then, about every 30 inches or so he places a barrel swivel and a 10- to 12-inch drop line. He stretches the trotline out and puts it in place without hooks. Then he comes back and attaches the hooks and baits the line. The weights on the drop lines keep the lines hanging straight down. Styrofoam floats at intervals on the main line keep the hooks suspended two to three feet off the bottom.

For bait, Hilton usually uses shad. "I just hook them right through the eyes. I have used worms, but they're kind of messy, and they're slower."



*A day of fishing on the bank of one of Florida's many small lakes can help all life's cares drain away.*

If you want to try a trotline for catfish, be aware of some special regulations concerning its use. Lt. Col. Gwynn Kelley, assistant director of the Game and Fresh Water Fish Commission's Division of Law Enforcement, said trotlines with 25 or fewer hooks are legal on a sport fishing license. That means 25 hooks total, not multiple trotlines with 25 hooks each.

"If you use more than 25 hooks, you need a commercial license," Kelley said. "Also, any game fish caught on a trotline must be released unharmed. And there are some prohibitions on where you can use trotlines. For instance, you can use up to 25 hooks in Lake Talquin, but trotlines are prohibited during daylight hours."

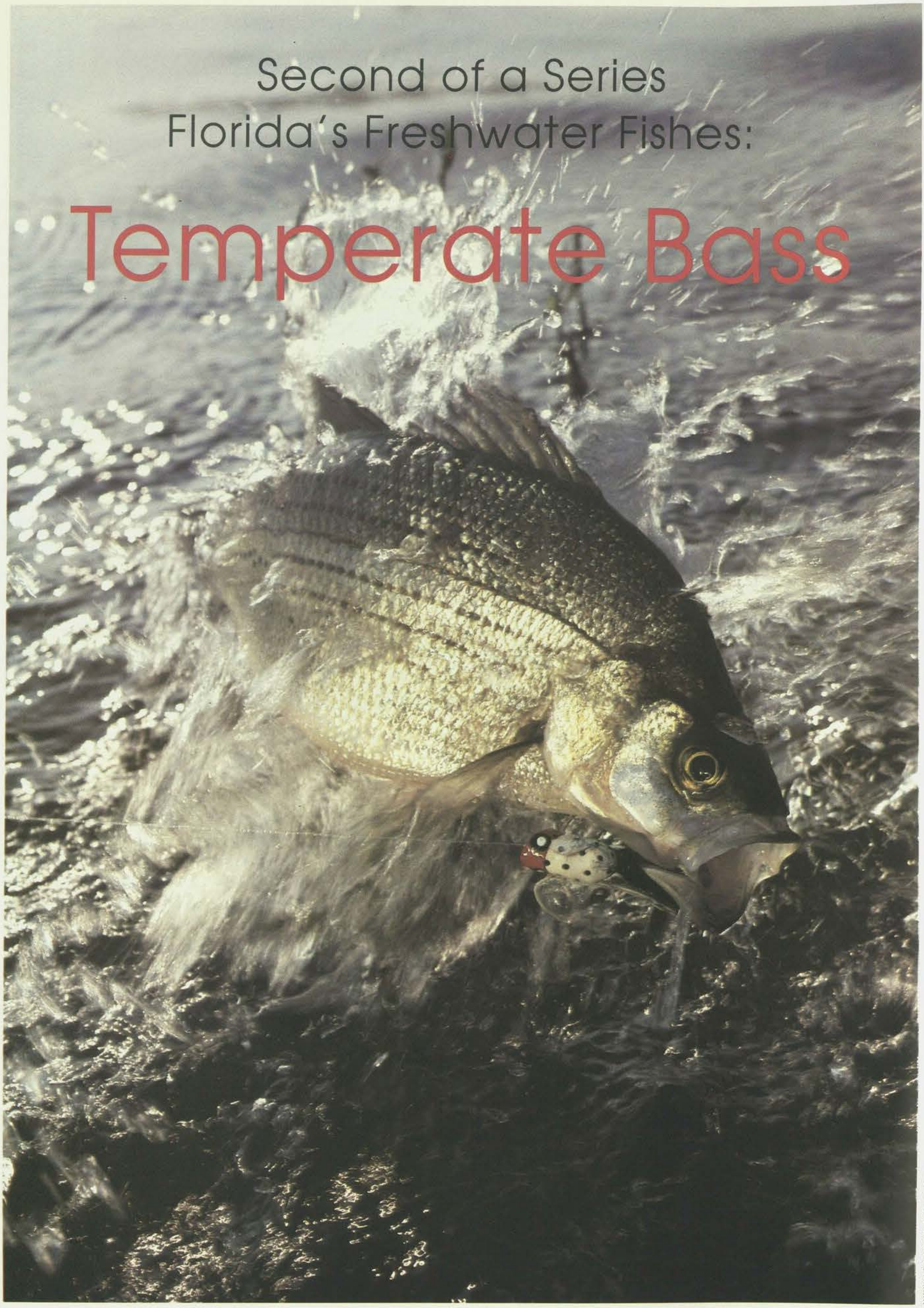
In other words, if you're going to try a trotline for catfish, *check the regulations on the lake or river before you go.*

Whether you use one of these techniques, try some other type of bottom rig, or invent one of your own, you can get back to basics by fishing for catfish this summer. Add the company of an enthusiastic youngster who's eager to learn to fish, and you have the makings of a perfect summer afternoon. ◆

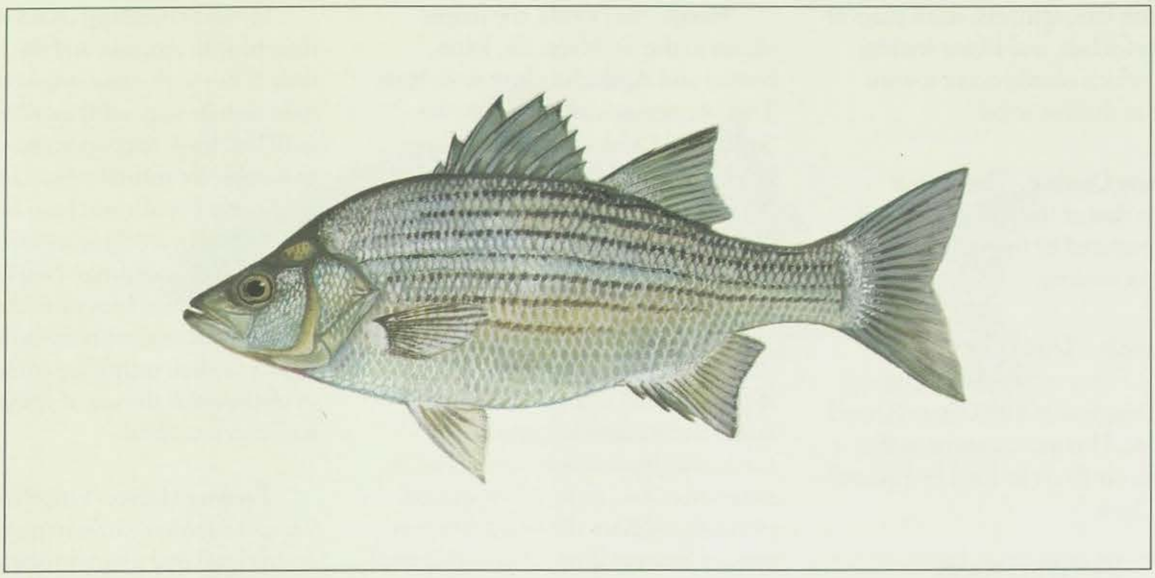
*Carolee Boyles-Sprenkel is a free-lance writer specializing in hunting, fishing and other outdoor recreational topics. She is president of Florida Outdoor Writers Association.*

Second of a Series
Florida's Freshwater Fishes:

# Temperate Bass



WHITE BASS BY DOUG STAMM



*White bass*

By Mark A. Trainor
Illustrated by Duane Raver Jr.

In the March-April issue, we featured black basses found in Florida. This time we look at white bass, striped bass and sunshine bass — the temperate bass family.

This group belongs to the genus *Morone*. Until recently, temperate basses were considered members of the family *Percichthyidae*, but are now placed in *Moronidae*, with species in North America, Europe and northern Africa. Temperate basses are moderate-to-large, active, popular sport fishes.

## WHITE BASS

**Common Names** - stripe, silver bass, striper, sand bass, barfish.

**Description** - The white bass looks like its larger relative, the striped bass. It is silvery-white overall with five to eight horizontal, dusky-black stripes along the sides. Stripes below the lateral line are faint and often broken in an irregular pattern. It differs most noticeably in being shorter and stockier with a smaller head, and the dorsal fins are set closer together. The white bass has a deep body, especially between the dorsal fins, and is strongly arched behind the head.

**Subspecies** - There are no recognized subspecies.

**Range** - In Florida, white bass are found only in the Apalachicola and Ochlockonee river systems.

**Habitat** - White bass are found in large lakes and streams connected to major river systems and in rivers with moderate current. They prefer clear water with a temperature range of 65 to 75 degrees. Man-made impoundments have greatly favored the white bass, but the species can become overabundant and stunted.

**Spawning Habits** - Male white bass migrate upstream in large schools to a dam or other barrier in early spring, followed shortly by schools of females. Spawning occurs in moving water over gravel shoals or a hard bottom. Large females may lay as many as half a million adhesive eggs that stick to rocks and gravel. If no water current is present, white bass have been known to spawn on wind-swept sandy beaches. After spawning, they abandon their eggs and provide no parental care. Fry hatch in only two to three days.

**Feeding Habits** - White bass are primarily piscivorous. Fry first feed on zooplankton, but within a few weeks they move on to larger crustaceans and insects. Larger fish prefer minnows and thrive on open-water baitfish like gizzard and threadfin shad. Like stripers, white bass move in schools and feed most heavily around dawn or dusk.

**Age and Growth** - Although white bass may live up to 10 years, few live beyond three to four years. Females grow slightly faster and probably live longer than males. The average size is 1 pound, with fish over 2 pounds considered large.

**Sporting Quality** - White bass are hard-hitting, fiercely fighting fish. They are one of the easiest fish to catch because of their aggressive nature combined with their schooling tendency. White bass anglers should use light tackle for maximum enjoy- ▷

ment, with flies, spinners, small plugs or minnows for bait, and locate feeding schools, which usually occur toward evening in shallow areas.

**Eating Quality** - The flesh is similar to that of the striped bass and may be prepared by frying, baking, broiling or stewing.

**Records** - World Record - 6 pounds, 13 ounces, caught in Lake Orange, Virginia in 1989. State Record - 4 pounds, 11 ounces, caught in the Apalachicola River in 1982 by Richard Steven Davis.

## STRIPED BASS

**Common Names** - striper, rockfish, rock, linesides.

**Description** - The striper is the largest member of the temperate bass family. Body coloration is olive-green to blue-gray on the back with silvery to brassy sides and white on the belly. Adult stripers are easily recognized by seven or eight prominent, black, uninterrupted, horizontal stripes along the sides. On young fish smaller than 6 inches, the stripes are often interrupted or broken and are usually absent. The striper is longer and sleeker and has a larger head than the white bass.

**Subspecies** - There are no recognized subspecies.

**Range** - In Florida, the striper occurs in the St. Marys, St. Johns, Nassau and Apalachicola river systems. They are occasionally found in the Suwannee, Ochlockonee, Choctawhatchee, Escambia and Blackwater rivers, usually as the result of a stocking program.

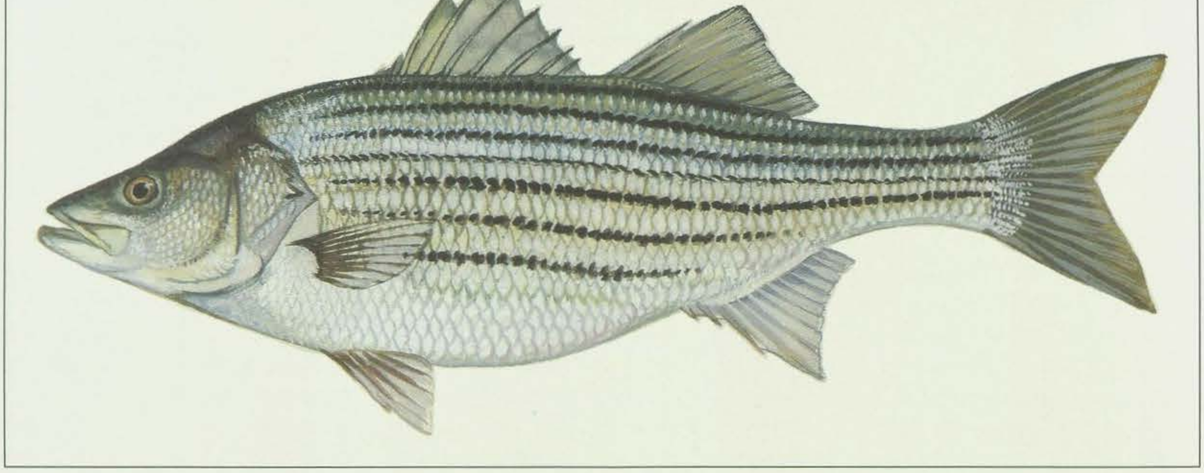
**Habitat** - All Florida populations of striped bass are river dwellers rather than anadromous (normally living in salt or brackish waters, but entering freshwater streams to spawn). The species has been widely introduced in numerous lakes, rivers and impoundments throughout the world. Stripers prefer relatively clear water with a good supply of open-water baitfish. Their preferred water temperature range is 65 to 70 degrees.

**Spawning Habits** - Striped bass spawn in March, April and May when water temperatures reach 60 to 68 degrees. Stripers are river spawners that broadcast millions of eggs in the water currents without affording any protection or parental care. During spawning, seven or eight smaller males surround a single, large female and bump her into swifter currents at the water's surface. At ovulation, ripe eggs are discharged and scattered in the water as males release sperm. Fertilized eggs must be carried by oxygen-rich river currents until hatching (about 48 hours) or else they would suffocate.

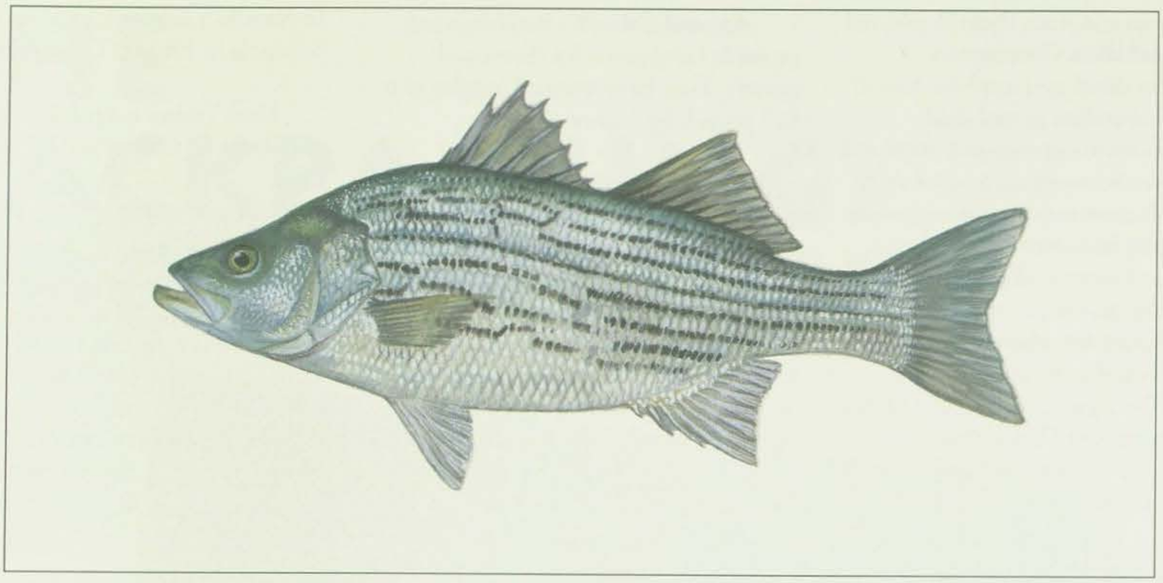
Fry and fingerlings spend most of their time in estuaries and the lower ends of rivers. Because striped bass eggs must remain suspended in a current until hatching, impoundments are unsuitable for natural reproduction. Freshwater populations have been maintained by stocking hundreds of thousands of fingerlings. Despite initial difficulties in hatchery procedures for obtaining females with freely flowing eggs, a modern technique of inducing ovulation with the use of a hormone has been successful.

**Feeding Habits** - Stripers are voracious feeders, consuming any kind of small fish and a variety of invertebrates. Preferred foods for adults are gizzard and threadfin shad, golden shiners, crustaceans and minnows. Younger fish prefer to feed on amphipods and mayflies. Very small stripers feed on zooplankton. Like other temperate bass, they move in schools, and all members of the school tend to feed at the same time. Heaviest feeding is in early morning and in evening, but they feed sporadically throughout the day, especially when skies are overcast. Feeding slows but does not stop completely when water temperatures drop below 50 degrees.

**Age and Growth** - Stripers are fast-growing and long-lived and have reached weights of over 30 pounds in Florida. Sexual maturity occurs at about



*Striped bass*



*Sunshine bass*

Like white and striped bass, sunshines appear to prefer clearwater areas within lakes and rivers.

2 years of age for male stripers and at 4 years of age for females. They can reach a size of 10 to 12 inches the first year.

**Sporting Quality** - The striper tends to be underrated among many Florida anglers. For fishermen who have caught this species, however, there is no disputing that the striper is a superstar among freshwater game fishes. Live shad and eels are excellent baits for catching big stripers. Other popular baits include white or yellow bucktail jigs, spoons, deep-running crankbaits and spinners rigged with a plastic worm. Popping plugs are best when stripers are schooling at the surface.

**Eating Quality** - Stripers are delicious and may be prepared in many ways. Smaller fish are usually fried; larger ones are baked.

**Records** - World Record (landlocked) - 66 pounds, caught in O'Neill Forebay, California in 1988. World Record - 78 pounds, 8 ounces, caught in Atlantic City, N.J. in 1982. State Record - 38 pounds, 9 ounces, caught in Lake Seminole in 1979 by Justin McAlpin.

## SUNSHINE BASS

**Common Names** - Striped bass hybrid, wiper, whiterock, palmetto bass.

**Description** - The sunshine bass is a hybrid produced by crossing a female white bass with a male striped bass. Sunshines closely resemble both striped and white bass, making identification difficult, particularly of young fish. When comparing adult fish, the sunshine has a deep body and an arched back similar to the white bass. Sunshines can often be distinguished by their broken or irregular stripes on the front half of the body and straight lines on the rear half. A mid-body break in line pattern occasionally occurs.

**Subspecies** - Since the sunshine bass is an artificial hybrid, there are no recognized subspecies. Some states, including Florida, produce a hybrid called the palmetto bass, a cross between a female striped bass and a male white bass.

**Range** - Sunshines are stocked throughout Florida. The largest fish are from northwest Florida, but sunshine bass have been successfully stocked as far south as Lake Osborne in West Palm Beach.

**Habitat** - Like white and striped bass, sunshines appear to prefer clearwater areas within lakes and rivers. Older sunshine bass require cooler water during summer months.

**Spawning Habits** - Sunshines do not reproduce naturally. Florida Game and Fresh Water Fish Commission biologists produce these fish in ▷

hatcheries and stock them in selected rivers and lakes. Commission biologists developed sunshine bass to control abundant gizzard shad populations in nutrient-rich lakes and to create and maintain a new fishery to supplement existing native species. Sunshines have served those functions most successfully in the Apalachicola River system (including Lake Seminole), where they have been stocked in most years since 1975. The Apalachicola is one of only a few northwest Florida rivers containing enough shad and thermal refuges to ensure optimal growth.

**Feeding Habits** - Like stripers, sunshines are voracious feeders and consume any kind of small fish, including threadfin and gizzard shad. Young fish also feed on mayflies and crustaceans. Sunshines also travel and feed in schools, with peak activity in the early morning or evening.

**Age and Growth** - Sunshines are probably best known for their rapid growth. They have attained weights of 6 to 7 pounds by 3 years of age.

**Sporting Quality** - As a sport fish, sunshines are known for their good fighting ability. Live threadfin or other small shad and shrimp are by far the most effective bait for sunshine bass. Artificial lures such as crankbaits, bucktail or feathered jigs, spinners and spoons also do well. In addition, topwater lures are effective when fish are schooling near the surface. Trolling with artificial lures often helps locate fish when surface feeding is slow.

**Eating Quality** - Similar to striped and white bass.

**Records** - World Record- 24 pounds, 3 ounces, caught in Leesville Lake, Virginia in 1989. State Record - 16 pounds, 5 ounces, caught in Lake Seminole in 1985 by Thomas Elder.

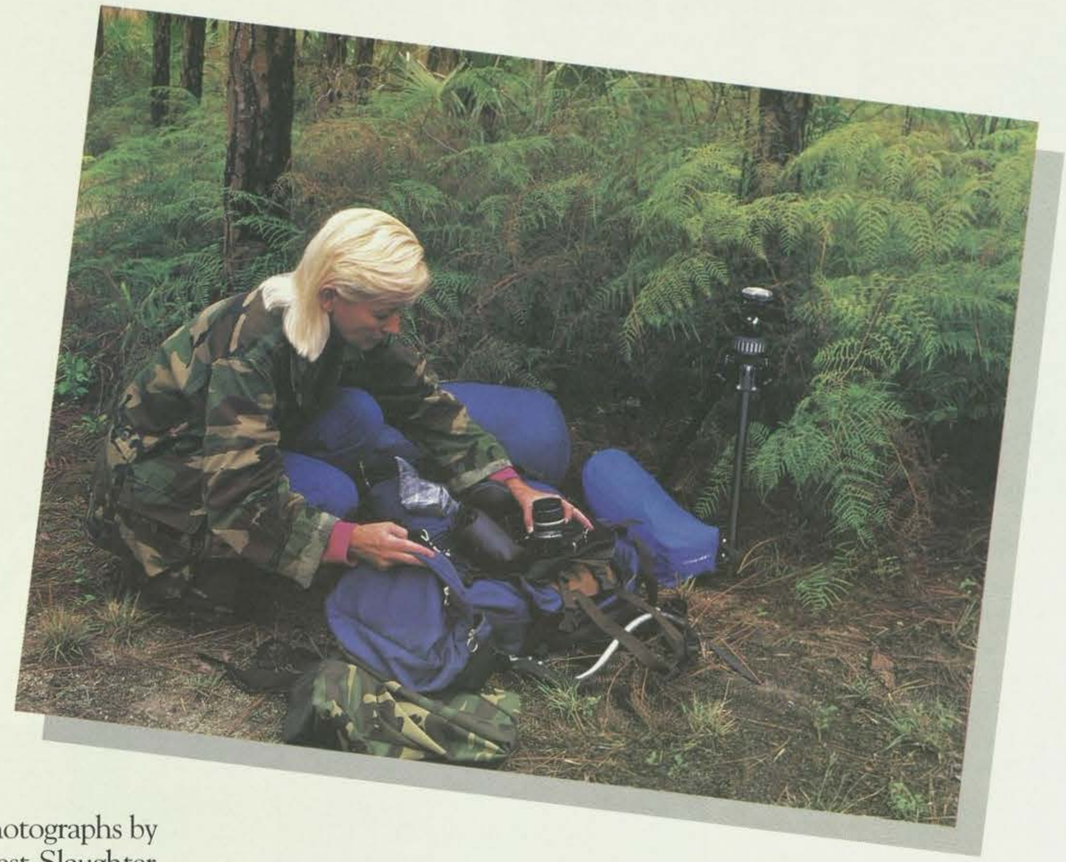
*Mark Trainor is a public information specialist in the Commission's Tallahassee office.*

The next installment in this series on Florida's freshwater fishes will focus on panfish. Included in this profile will be members of the genus *Lepomis* — warmouth, spotted sunfish, bluegill, redear sunfish and redbreast sunfish. Also featured will be members of the genus *Pomoxis*, or true sunfish — black crappie and flier. ●

*Striped bass*

GFC

# THE BACKPACKING PHOTOGRAPHER



Text and Photographs by
Helen Longest-Slaughter

Backpacking and photography top my list of favorite things to do. Combining the two provides a unique opportunity to completely immerse myself in nature without having to return to the concerns of daily life each evening. Wilderness hiking trails appeal to me more than crowded photographic hot spots. And, when backpacking with a camera, I really slow down to observe the natural treasures I might otherwise overlook. However, careful planning is a must for such a trip in order to enjoy your adventure.

As a backpacking photographer, remember that you'll be carrying your temporary home, food, clothing and other essentials in addition to photo equipment. Therefore, weight should be a primary concern when preparing for a backpacking trip. Expert backpackers recommend limiting the weight in your pack to one-third your body weight. This means that if you weigh 120 pounds, you should carry only 40 pounds. A 180-pound person could carry up to 60 pounds. A pack loaded within these guidelines will make your hike more pleasant.

When preparing for your initial backpacking trip, your first decision is whether to use an internal or external frame pack. Each type has good and bad points. A disadvantage of an external frame pack is that the frame can get caught on low tree limbs. This has not been a problem for me, however, even on rugged portions of the Appalachian Trail.

When packing an internal pack, be sure to keep the heavier items against your back; this is not as essential with an external pack. What is essential with both types is packing your load securely to prevent it from shifting and throwing you off-balance during your hike. Men and women should pack according to their center of gravity. Men should pack heavier equipment at shoulder-blade height and up. For women, the heavier items should go below shoulder-blade height. Regardless of whether you choose an internal or external backpack frame, make sure the backpack is right for your height. Don't expect a backpack designed for a 6-foot hiker to ride comfortably if you are only 5 feet, 4 inches. Many manufacturers offer ▷

backpacks for hikers 5 feet, 6 inches or shorter with the same features and capacity as backpacks constructed for hikers 2 inches taller or more.

Before packing your photography equipment, consider the essentials you must carry. Determine the weight and bulk of these necessary items, and then you'll know how much available space and weight is left for photo gear.

Before I embarked on my first backpacking trip, I listed the supplies I needed to carry and their weights. I studied my initial list and then eliminated unnecessary gear, such as a dinner fork and knife. All of my camp food could be eaten with a spoon, and because I was carrying a Swiss Army knife, I didn't need a dinner knife.

In "The New Complete Walker," Colin Fletcher provides essential tips for planning a backpacking adventure. He goes so far as to suggest trimming margins off maps and removing tea bags from their paper wrappers to save weight. This may sound silly if you have never backpacked, but once you've spent a week on the trail, you realize that every ounce counts.

Your food should weigh about 2 pounds for each day, so if you are planning a week-long hike, you will be carrying about 14 pounds of food on the first day and only 2 pounds on the last day. As a result, your pack will be heaviest at the beginning of the hike and get lighter as you eat your food.

Plan on consuming 4,000 to 6,000 calories a day while on your trip — hiking burns up lots of calories. Make sure the food you select is nutritious, tasty and easy to prepare. Finally, when selecting food items, think about the litter you'll be packing out. Cans are more cumbersome to pack out than wrappers.

Unfortunately, it's no longer safe to drink water directly from even clear-running streams, so bring a water-purification system with you. I use First Need, which pumps the water through a filter system and removes microscopic organisms, including *Giardia*. It's important that you don't become dehydrated when hiking. I fill my canteens each time I come to a water source. As a backup to my filter system, I carry water purification tablets in case the filter gets clogged or the pump breaks. Remember, you can't survive long without water. The length of survival time depends upon temperature, humidity, wind, available shade, amount of exercise and your health.

If I weigh 120 pounds and start out with 35 pounds, 3 ounces of necessities, plus the weight of the water, by the time I add 11 pounds of camera equipment and film, I will have exceeded the suggested one-third of my body weight. However, as I use food and cooking fuel, my pack gets lighter, so by the third day my pack's weight is more in line with the suggested maximum for my body weight.

The best way to handle a heavy backpack is to hike to the first camping site and spend two nights at the same location. This allows a full day for photography before setting back out on the trail, during which time I will use 4 pounds of food and some fuel. In fact, I've found that in order to photograph while backpacking, I'm better off hiking one full day and spending the next day shooting. I may cover less distance than other backpackers, but I get the most out of the opportunity to take photographs this way.

Because of the weight limitations associated with hiking, it's necessary to limit your photography equipment. When photographing during a hike, concentrate on scenes and subjects that allow you to use shorter lenses. Leave longer, heavy telephotos or zooms at home, as well as heavy tripod models.

*Experts recommend that you pack no more than one-third your body weight.*

*Roseate spoonbill on a mangrove.*

*Swamp lily.*

Using short telephotos or zooms allows you to use a lighter tripod, which reduces the weight of your gear.

One of my primary reasons for taking a week-long backpacking trip is to recharge my batteries worn low by the pressures of our modern world. If I want to add wildlife photography to my stock, which requires longer, heavy lenses and a heavy-duty tripod, I work out of a base camp instead of hike. I am realistic when backpacking along a trail for a week and carry only a limited amount of equipment. I also observe safety precautions, such as never hiking during a thunderstorm. Remember, your pack is essentially a metal frame and could act as a lightning rod during a storm. Therefore, it's best to remove your pack and wait until the storm passes. We always hope for sunny days on a hike, but whatever the weather, hiking is a fulfilling experience that can double as a productive photo adventure as well.

The following are a few of my favorite trails. ▷

### Florida Trail (1,300 miles)

This trail runs north from Big Cypress National Preserve in southern Florida around Lake Okeechobee, through Orlando, into the Ocala and Osceola national forests, and then cuts west to the Apalachicola River and the white sands of Gulf Islands National Seashore. The trail passes through savannahs, swamps, salt marshes and pine flatwoods. The longest continuous segment extends nearly 450 miles from Orange County (north of Orlando) to the Apalachicola National Forest (southwest of Tallahassee). If you plan to hike in the Big Cypress segment, check on trail conditions prior to a trip by contacting the Oasis Ranger Station at (813) 695-4111 in Big Cypress. For information about the trail, contact The Florida Trail Association at P.O. Box 13708, Gainesville, FL 32604 (800) 343-1882 or (904) 378-8823.

### Hontoon Island State Park

Hontoon Island State Park is located six miles west of DeLand off S.R. 44 and comprises 1,650 acres. This island is bordered by the St. Johns River and Hontoon Dead River and is accessible only by private boat or by passenger ferry, which operates daily from 9 a.m. until one hour before sundown. There are campsites and rustic cabins on the islands. Trails and roadways (only Florida Park Service vehicles allowed on the island) traverse the island and run through beautiful hardwood and palm pinelands, providing a variety of photographic opportunities. For information contact Hontoon Island State Park, 2309 River Ridge Road, DeLand, FL 32720 (904) 736-5309.

### Myakka River State Park

Located 12 miles east of Sarasota on S.R. 72, Myakka River State Park has distinct biological communities and a large wildlife population. You'll find oak-palm hammocks, grassy marshes, sloughs, Upper Myakka Lake, dry prairies, pine flatwoods and numerous ponds. There are several good hiking trails and one has backcountry sites available. For information contact Myakka River State Park, 13207 S.R. 72, Sarasota, FL 34241-9542 (813) 361-6511.

*Bobcat at J.W. Corbett Wildlife Management area.*

### St. Marks Wildlife Refuge

This 65,000-acre federal preserve, located 20 miles south of Tallahassee on C.R. 59, has 43 miles of backpacking / hiking trails. Back-country camping at St. Marks is permitted when you hike the 43 miles of the Florida Trail that runs through the refuge. Depending on water levels, you may find yourself hiking in water for portions of the trail. The refuge encompasses freshwater marshes and pools, tidal flats, pine woodlands and Apalachee Bay. There are 300 species of birds in residence during portions of the year, and other wildlife includes deer, bears, otters and alligators. If you're interested in history, seek out the Indian mounds and 150-year-old lighthouse. For information contact St. Marks National Wildlife Refuge, P.O. Box 68, St. Marks, FL 32355 (904) 925-6121.

### DuPuis Reserve Wildlife and Environmental Area

This 21,935-acre reserve is located in Palm Beach and Martin counties. Wildlife is abundant, and trails lead through pine woodlands. During periods when the reserve is closed to hunting, camping is permitted only at designated primitive sites on hiking trails and at the designated equestrian staging area at Gate 3. Deer are abundant, and fox squirrels inhabit the woodlands. For information contact the Florida Game and Fresh Water Fish Commission, 551 North Military Trail, West Palm Beach, FL 33415 (305) 640-6100.

*Helen Longest-Slaughter is photo editor of "Nature Photographer" magazine.*

## WHAT TO CARRY

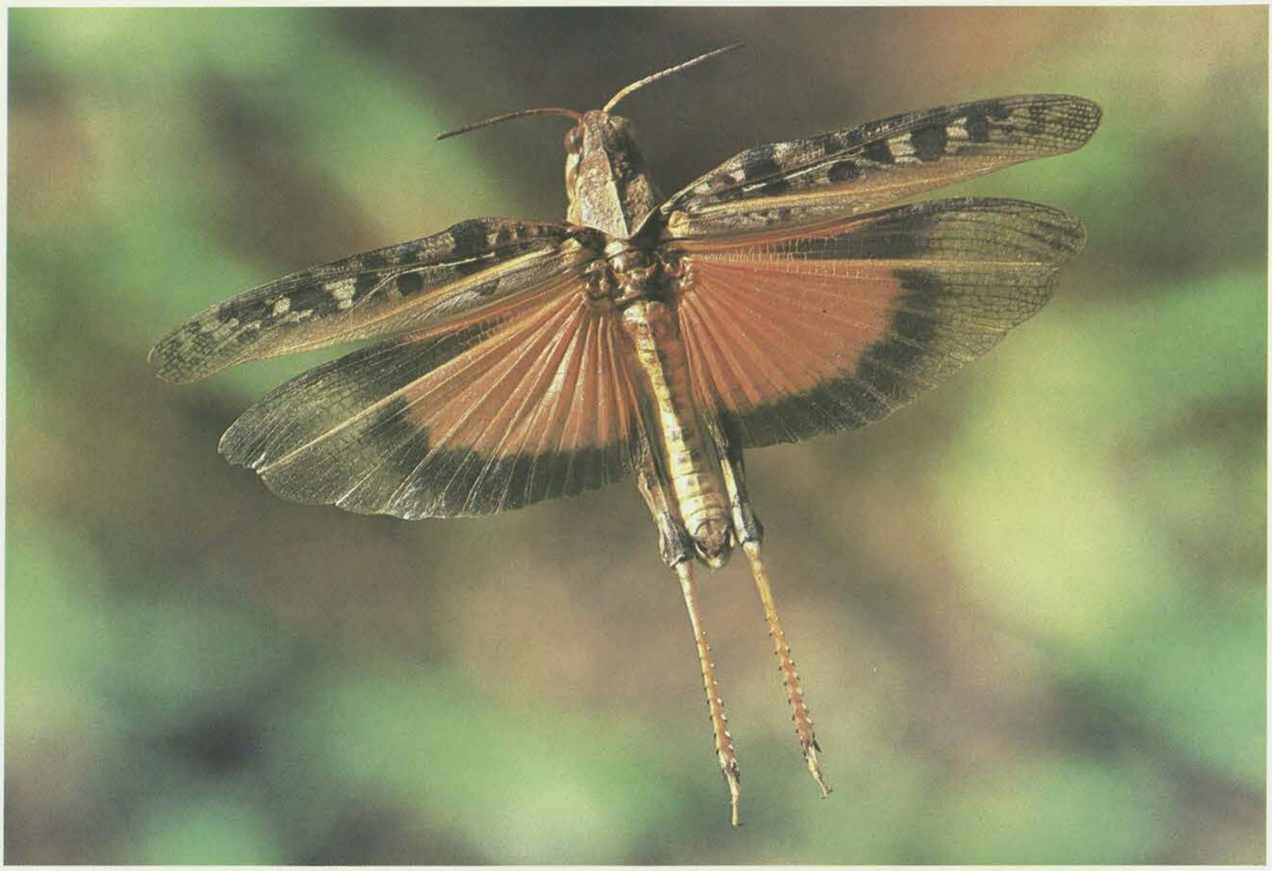
To help you determine the items you should consider packing when preparing for a photo-backpacking trip, I've listed the non-photography equipment, with weights, that I typically carry for a week-long hike:

| | |
|---|---|
| Sierra 2-person backpacking tent | 2 lbs. 12 oz. |
| Hollofil II mummy sleeping bag | 4 lbs. |
| Jansport Expedition exterior frame pack | 4 lbs. |
| Rain poncho (large enough to cover me and my pack) | 0 lbs. 12 oz. |
| Extra clothing | 2 lbs. 08 oz. |
| Small flashlight | 0 lbs. 05 oz. |
| Compass and maps | 0 lbs. 08 oz. |
| Matches | 0 lbs. 02 oz. |
| Backpacker's trowel | 0 lbs. 02 oz. |
| Toilet tissue | 0 lbs. 04 oz. |
| Sportsman's emergency signal kit | 0 lbs. 05 oz. |
| Small first aid kit | 0 lbs. 12 oz. |
| First Need water purification system | 1 lb. |
| 1-burner Gaz Fleuet stove | 0 lbs. 10 oz. |
| Butane cartridges (3) | 1 lb. 04 oz. |
| A cup (large enough to use for heating water, drinking and eating) | 0 lbs. 08 oz. |
| Swiss Army knife | 0 lbs. 03 oz. |
| Food for 7 days @ 2 lbs. per day | 14 lbs. |
| Plastic garbage bags for packing out litter | 0 lbs. 04 oz. |
| Canteens | 1 lb. |
| **TOTAL WEIGHT OF NON-PHOTOGRAPHY SUPPLIES** | **35 lbs. 03 oz.** |

**Note:** The weight of the water being carried is constantly changing as water is consumed and canteens are refilled.

# Florida's Grasshoppers

### Text and Photographs by Sidney W. Dunkle



*Red-winged grasshopper* (***Pardalophora phoenicoptera***).

Grasshoppers are the closest thing the insect world has to a rabbit. Not only do they have a blunt face, bulging eyes, and ear-like antennae, they hop about and eat vegetation. They also multiply prolifically and are popular food items for many other creatures.

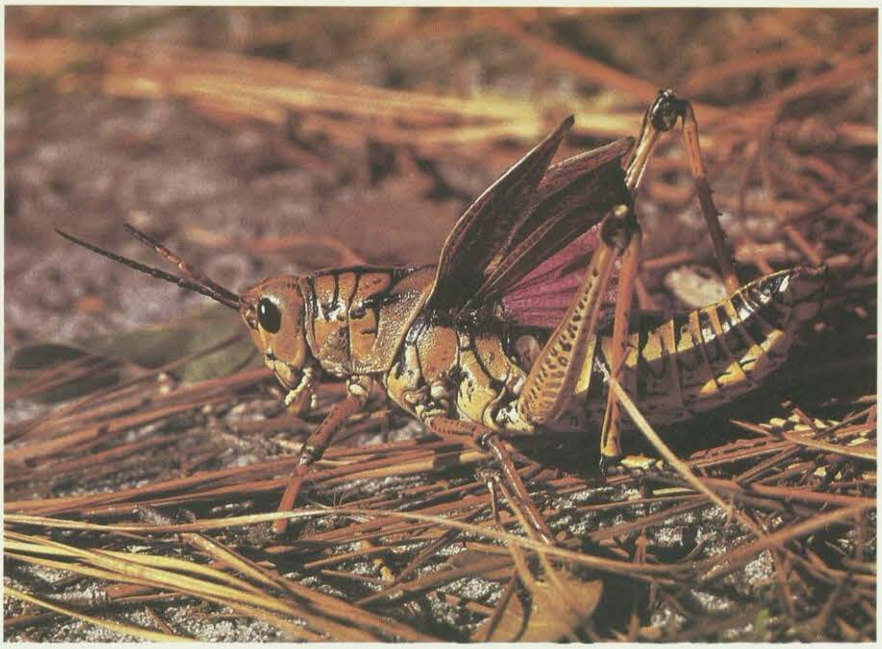
Grasshoppers may seem easy to catch, but some kinds are definitely elusive. One of their common escape tricks is to dodge around to the other side of a plant stem like a miniature squirrel. Many are wary and fly long distances, and as they are about to land, they fold their wings to make them less conspicuous as they drop into the weeds. Then they often take a hop in an unexpected direction just after landing. Others take a crafty series of fast, random jumps in dense jungle brush, then dive under leaf litter and freeze. All these tricks and strategies come, of course, from being chased by everything from turkeys to toads.

The grasshoppers under discussion here are the short-horned or "true" grasshoppers. There are about 70 species in Florida that entomologists classify in the insect order Orthoptera, family Acrididae. The short-horned grasshoppers get their name from their relatively short, thick antennae compared with the long whip-like ones of crickets and katydids.

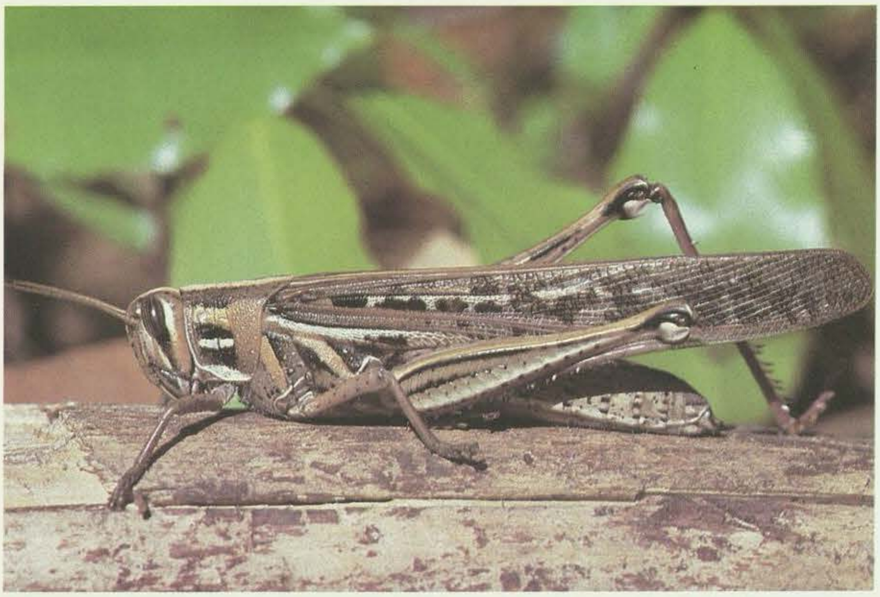
One of the most conspicuous Florida grasshoppers is the largest one, the eastern lubber grasshopper. This is the critter commonly used in biology classes as an all-around example of an insect. It's heavier than a mouse and too fat to fly. In fact, it does not even hop very well and is commonly seen walking across roads. For protection, this insect relies on its bad taste. Like most grasshoppers, when molested it regurgitates obnoxious "tobacco juice" from its mouth. Plus it raises its short, red hindwings like warning flags and sprays a brown, toxic mixture with a hiss from a pair of specialized breathing tubes. All this kills the appetite of most predators. The young, or nymphs, are black with either red or yellow stripes. Since they do not have their red warning wings yet, they travel in herds for safety. A bird may try to eat one of them but will leave the others alone. At maturity, the eastern lubber grasshopper either remains mostly black, or becomes mostly yellow. Different color forms of the same species is a very common phenomenon among grasshoppers.

The largest flying grasshopper in Florida is the American locust, a mottled brown grasshopper with yellowish wings that span 4 inches. A wary insect, it will commonly fly a long distance and land in a tree upon being flushed from a field. In fact, a few each year fly all the way to Bermuda, 625 miles from the North American coast! This grasshopper is closely related to the plague locusts of Africa, which migrate in huge swarms. Fortunately the American locust is seldom abundant enough to cause significant crop damage.

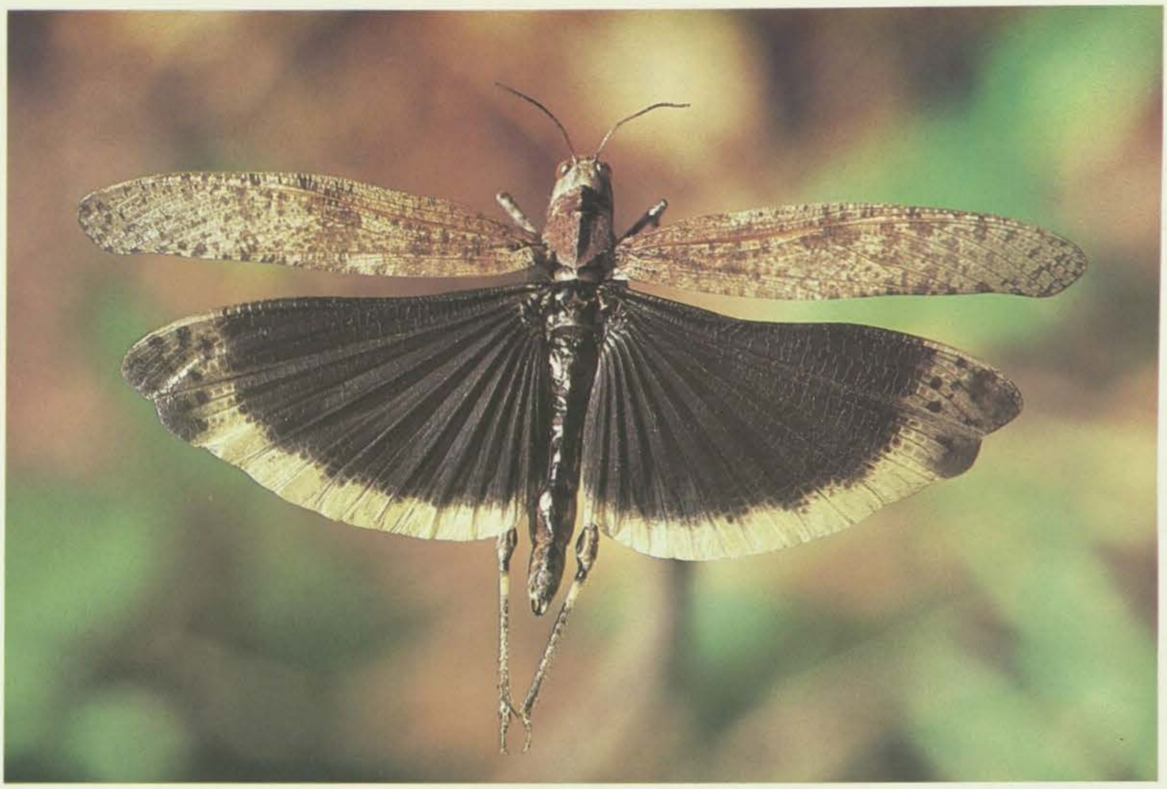
It should be mentioned that the loud, pulsating noise coming from tree tops in the daytime is not made by locusts but rather by cicadas, an entirely different type of insect, related to aphids. Many species of grasshoppers do sing a song, but it is typically a soft, rasping sound made by scraping a hind leg against a wing. Grasshoppers receive each other's songs with an eardrum located on each side of the base of the abdomen. Grasshoppers also signal to each other by thumping their hind legs on the ground, as well as by flashing the bright colors of their wings or of the inside of their rear legs. ▷



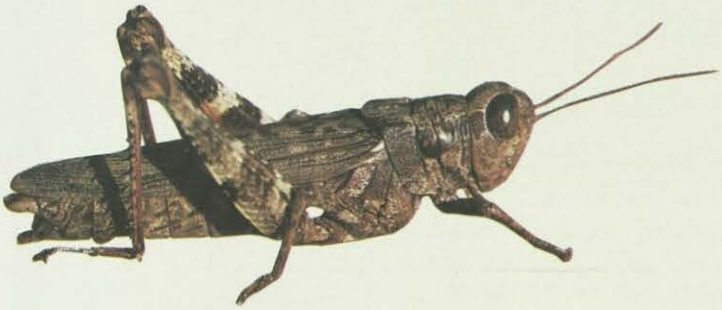
*The eastern lubber grasshopper (**Romalea guttata**) in its warning display. Droplets of brown, defensive secretion can be seen above the base of the middle leg, and an eardrum is visible above the base of the hind leg.*



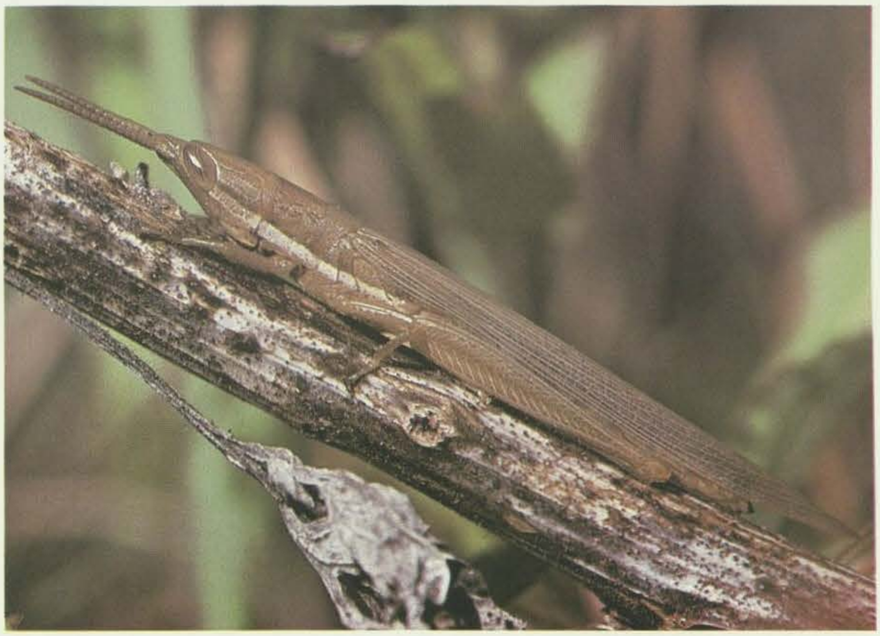
*The American locust (**Schistocerca americana**) is closely related to the plague locusts of Africa but does not migrate in vast swarms.*



*The Carolina grasshopper (**Dissosteira carolina**) is easily recognized by its unique wing pattern.*



*The pine-tree grasshopper (**Melanoplus punctulatus**) lives high in pine trees.*

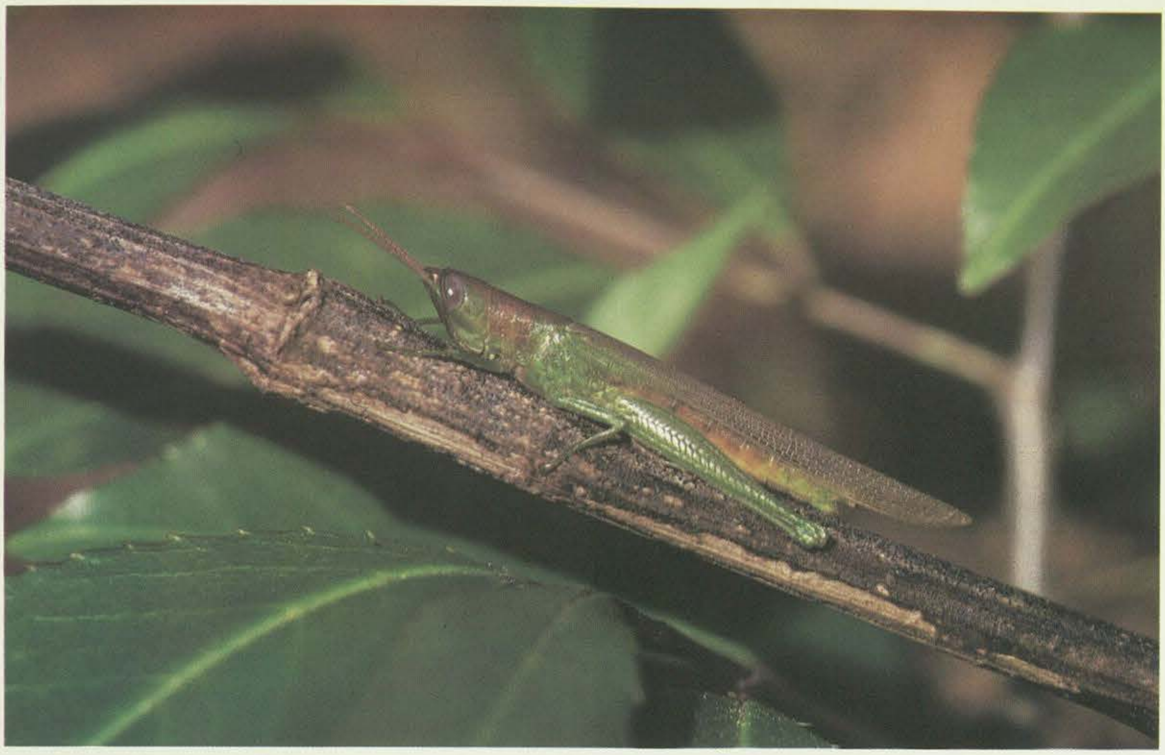


*The cattail toothpick grasshopper (**Leptysma marginicollis**) hides underwater.*

Prettiest of the grasshoppers are the band-winged grasshoppers. They usually have red or yellow hindwings, but one common species in north Florida, the Carolina grasshopper, has black hindwings with a yellow border. Some band-winged grasshoppers, particularly males, can snap their wing veins together during flight to make a loud crackling noise. To the human ear this often sounds like a bad case of flatulence, but a female grasshopper of the same species apparently finds the sound seductive.

A few species of grasshoppers do very ungrasshopper-like things. For instance, the pine-tree grasshopper lives high in pine trees. A slender, brown grasshopper with a white stripe on each side, the cattail toothpick grasshopper lives near the water, where it dives to hide when it is chased. A similar green grasshopper that lives in the same habitat, the glassy-winged grasshopper can "land" and take off from the water's surface. This species also lays its eggs inside pithy plant stems, whereas nearly all others deposit their eggs in the soil.

One of the most interesting grasshoppers, found only on the Florida

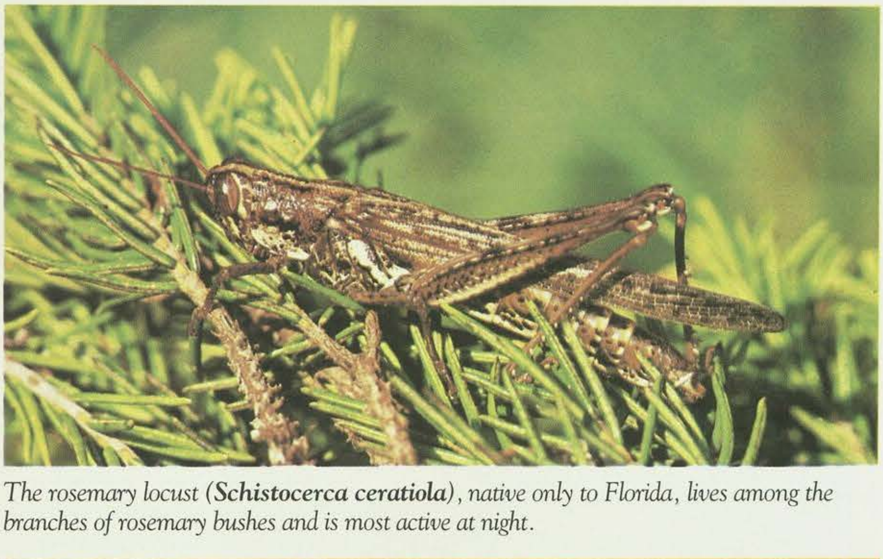


*The glassy-winged grasshopper (**Stenacris vitreipennis**) can land and take off from the surface of a lake.*

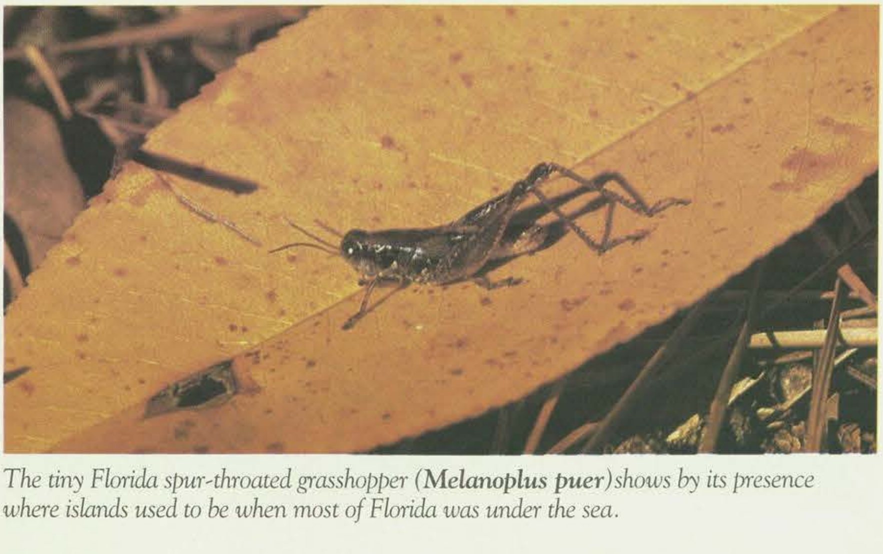
peninsula, is the rosemary locust. It spends its entire life among the branches of one species of plant, the rosemary bush that grows in dry, sandhill habitats. To avoid becoming dehydrated, the rosemary locust is most active at night.

From a conservationist's point of view, a particularly noteworthy group of grasshoppers are small, brown, vestigial-winged species of the genus *Melanoplus*. The presence of one of these species in an area shows that there is something unusual about the geological history of that spot, usually that it was an island when most of Florida was under the sea. These grasshoppers indicate which patches of habitat are likely to contain other unusual wildlife or plants, and should therefore be spared from the bulldozer.

*Sidney W. Dunkle is a biology professor at Collin County Community College in Plano, Texas. Formerly he managed the International Odonata Research Institute, a private, nonprofit association located at the Florida Division of Plant Industry, Department of Agriculture and Consumer Services, Gainesville.*



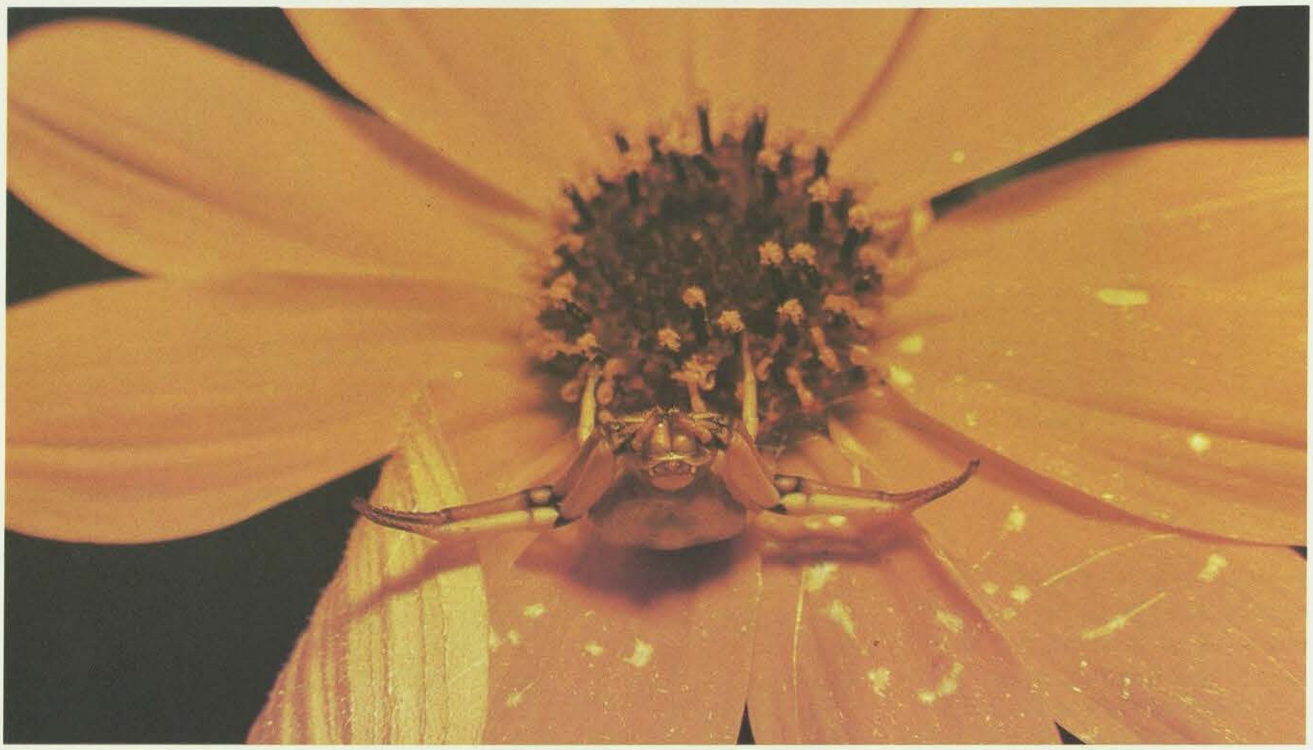
*The rosemary locust (**Schistocerca ceratiola**), native only to Florida, lives among the branches of rosemary bushes and is most active at night.*



*The tiny Florida spur-throated grasshopper (**Melanoplus puer**) shows by its presence where islands used to be when most of Florida was under the sea.*

# Flower Spiders

## *The Thomisidae hide in the throats of flowers to ambush their prey.*



Text and Photographs
by James Phillips

The first time you encounter one can be a little unsettling. We were hurrying back to the car after a ramble through part of the Citrus Wildlife Management Area, near Inverness. The weather had changed unexpectedly; the sky had become sullen, and rain was imminent. While maneuvering through a field of waist-high weeds we noticed a curious sight — a bee hanging from the base of a sunflower blossom. It seemed a strange way for a bee to rest.

A closer look revealed that the bee was dead. It was held at the throat by what appeared to be a folded flower petal, but was actually a crab spider, one of the Thomisidae, or flower spiders.

You might not notice one of these little spiders at all, unless it was holding a prey insect like a bee or a moth. The flower spider is an ambusher. It lies in wait in flowers or on leaves with its forelegs outstretched, maintaining perfect stillness for hours until an unsuspecting insect visitor happens by. Then, with its forelegs, it clasps and subdues its struggling victim while gripping the host plant with its rear legs, assisted in both tasks by tiny pairs of claws on each foot. It delivers a potent and paralyzing bite, and like other spiders, it then ingests the dissolved internal organs of its prey.

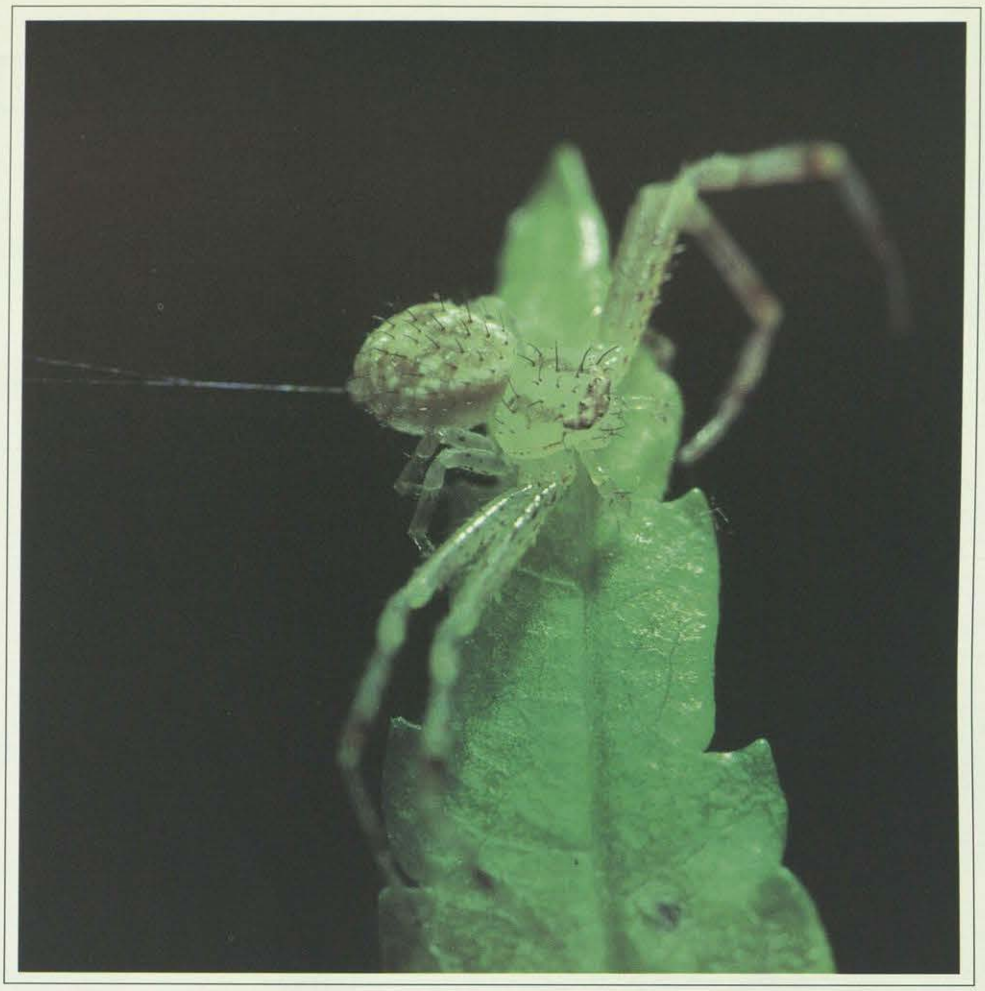
Actually, Thomisidae are one of four families of crab spiders found in the United States. Often incorrectly referred to as a crab spider is the distinctive, crab-like spiny orbweaver, a member of the family Araneidae. All Thomisidae are rather small, averaging about a third of an inch in length. Like crabs, they can scuttle forwards, sideways or backwards. Their bodies are wide and flat, and the first two pairs of legs of some may be three times the width of the body. Thomisidae don't make webs or snares as other spiders do. Males of some species use silk to tie females down during mating. Females use it to make a silken sac or nest (inside which they lay eggs) on a leaf or in a flower.

Like most spiders, young Thomisidae also use silk for "ballooning." In spring or fall, newborn ▷

Adult in ambush position.

(below) Adult Thomisidae on gayfeather with prey insect.

Although the spiders inhabit a great variety of flowers, they seem to favor those whose coloration they can mimic, such as daisies and goldenrod.



*An immature Thomisidae prepares to balloon.*

spiderlings ascend to the top of the nearest plant, post or whatever is handy. There they turn to face the prevailing air currents and spin several silk lines that are soon long enough to act as a parachute. When the spiderling senses that enough silk has been released, it simply casts fate — and self — to the winds. Young spiders may be carried to fantastic heights and distances in this manner. If you've ever seen a meadow early on a spring morning just after the spiders have hatched, you may recall seeing the air filled with gleaming, criss-crossing mercury strands — truly a dramatic sight.

Unlike other Thomisidae in Africa, Madagascar and Malaysia that have acquired the ability to mimic dried seeds, leaf buds and even bird droppings, flower-dwelling crab spiders sometimes rely on color changes for camouflage. Although they inhabit a great variety of flowers, they seem to favor those with yellow coloration they can mimic, such as daisies or goldenrod. They are able to change color in about a week and can revert to their original color in five days. They usually are white to yellow with red or reddish brown markings. Sometimes they're perfectly camouflaged and are practically impossible to spot. Other times they stick out like a sore thumb.

Although the flower spider is said to possess a potent venom, its jaws are not robust enough to penetrate human skin. Still, discovering one of these little fellows unexpectedly is a bit unsettling. So when you're out on a deep woods ramble, or even when you're at work in the garden, and you stop to smell the roses, be careful where you put your nose.

*James Phillips is a free-lance writer/photographer operating Silverlake Photography Services in Tampa.*

# 1992 Cover Art Winner

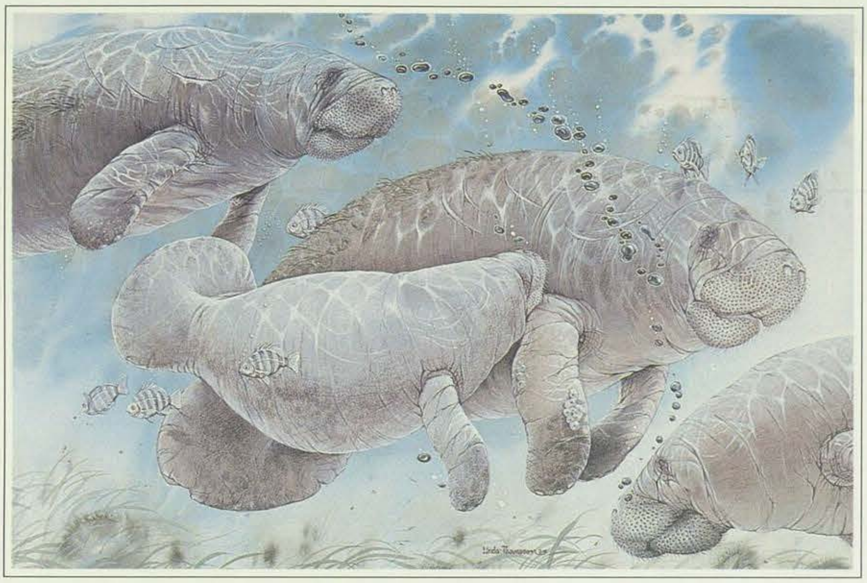


*Image size: 17" wide by 11.5" high. Limited edition of 1,000 signed and numbered prints.*

**Linda Thompson's watercolor painting won the 1992 FLORIDA WILDLIFE Magazine Cover Art Contest.**

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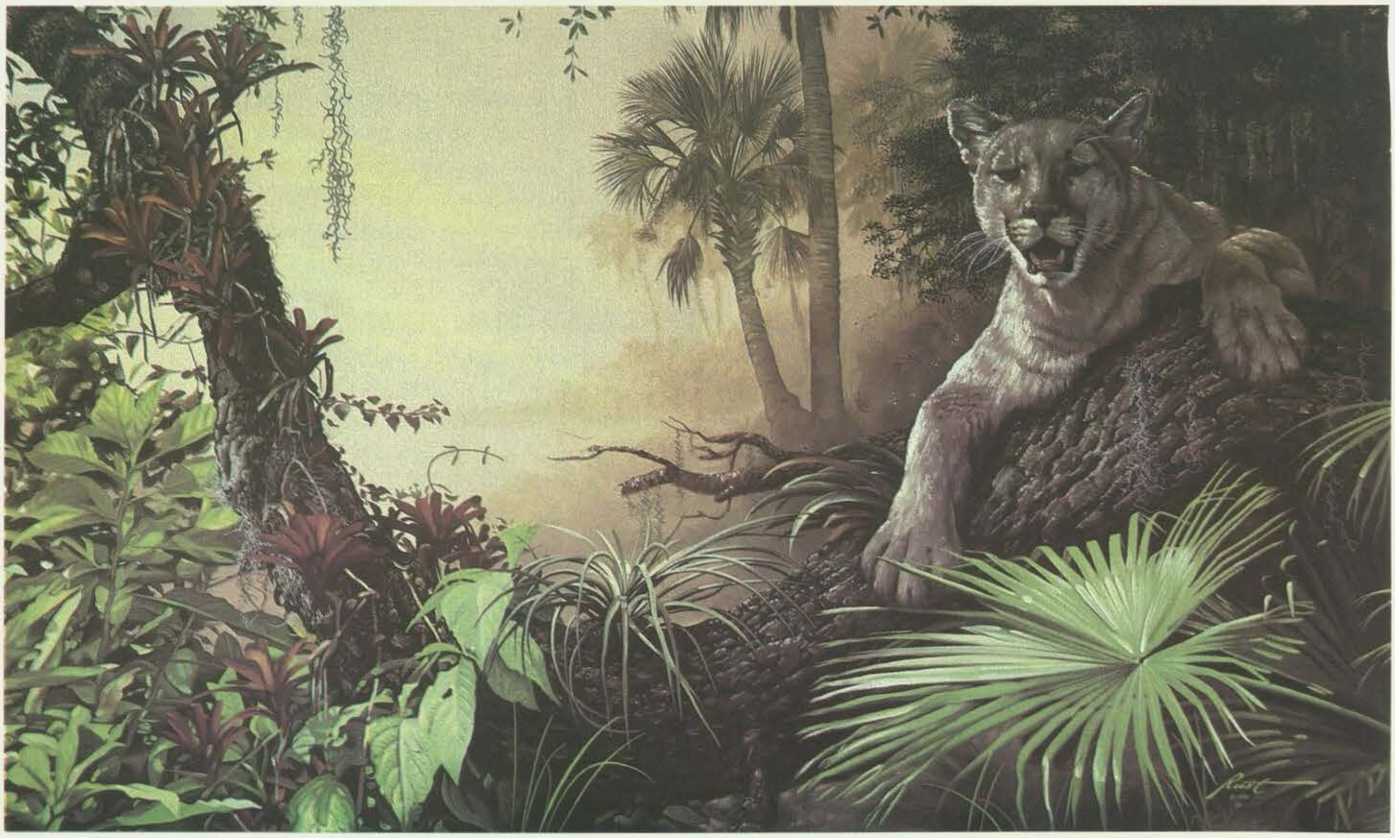
# 1992 Cover Art Runners Up

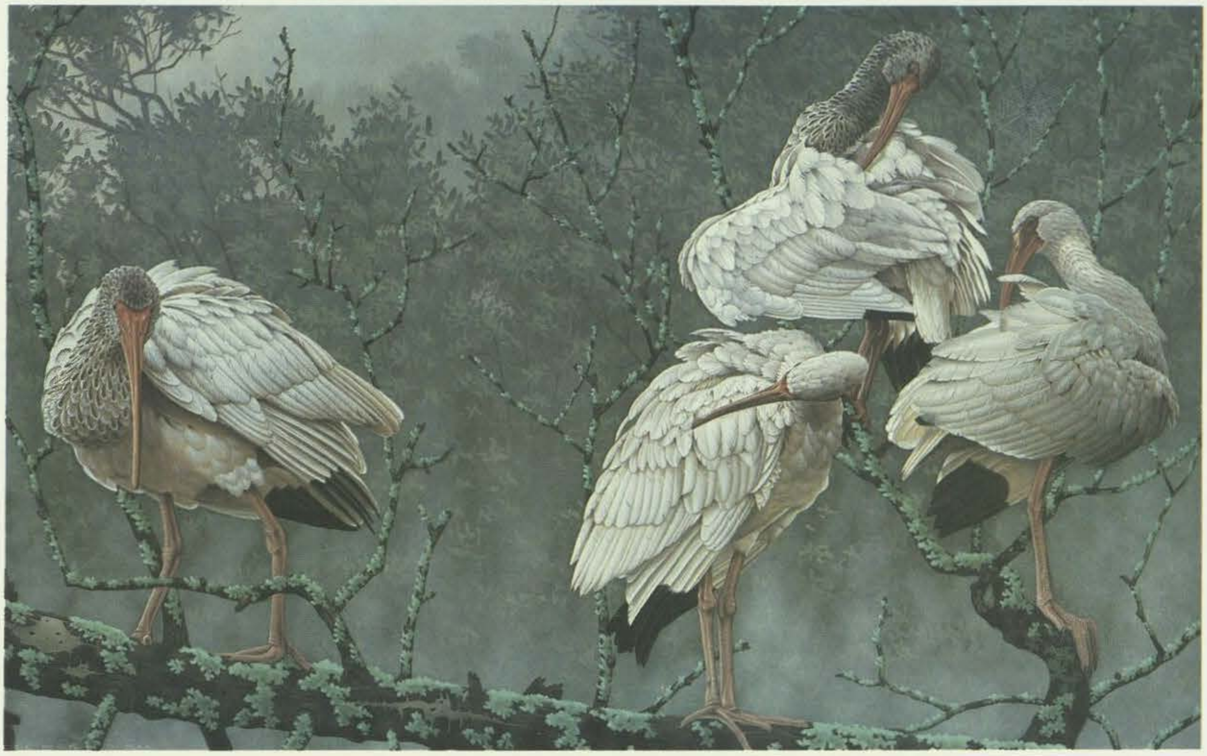
FLORIDA WILDLIFE proudly announces the winners of the 1992 cover art competition. Linda Thompson's manatee painting won first place in the contest and is featured on the covers of this issue. Support FLORIDA WILDLIFE's efforts to promote wildlife conservation by taking advantage of our free manatee art print offer on page 27.

Numerous talented artists submitted their depictions of Florida's diverse wildlife. Some of our favorites are reproduced on the following pages. Although these pieces are not available as prints, we hope that they will enhance your appreciation of wildlife art.

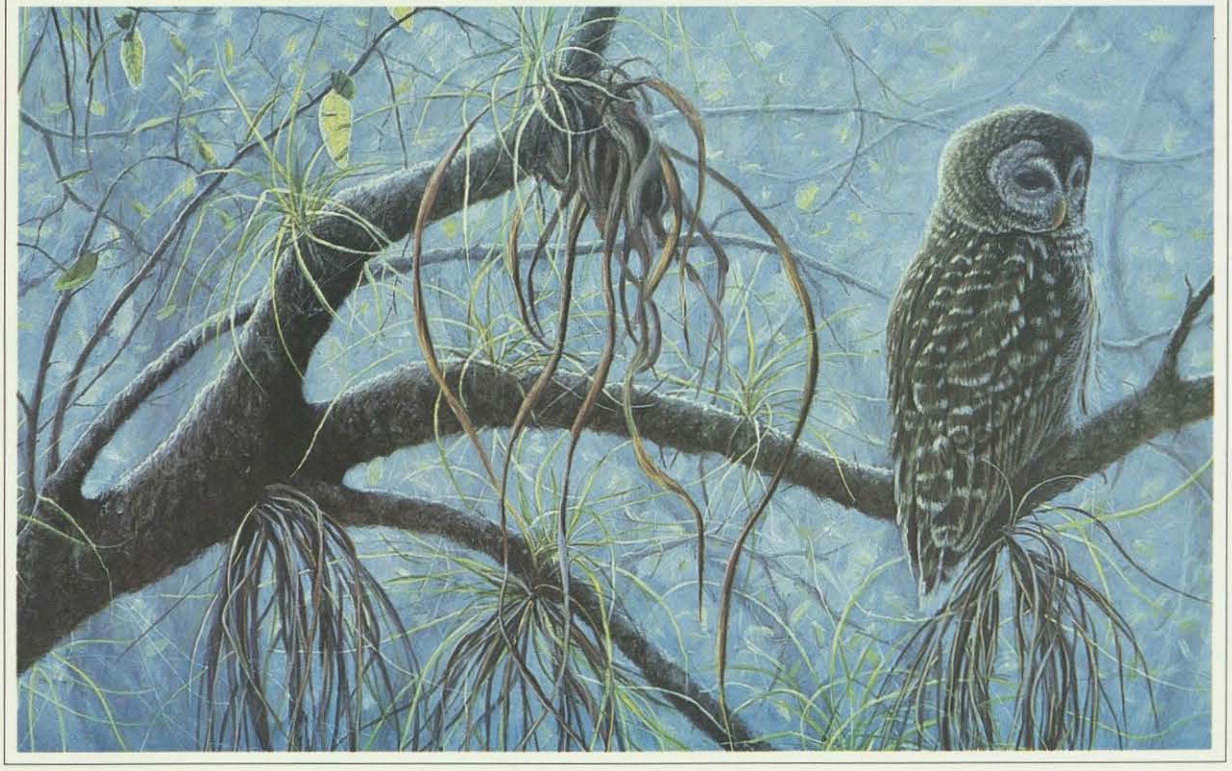


*FLORIDA PANTHER by Donald Rust*

# 1992 Cover Art Runners Up



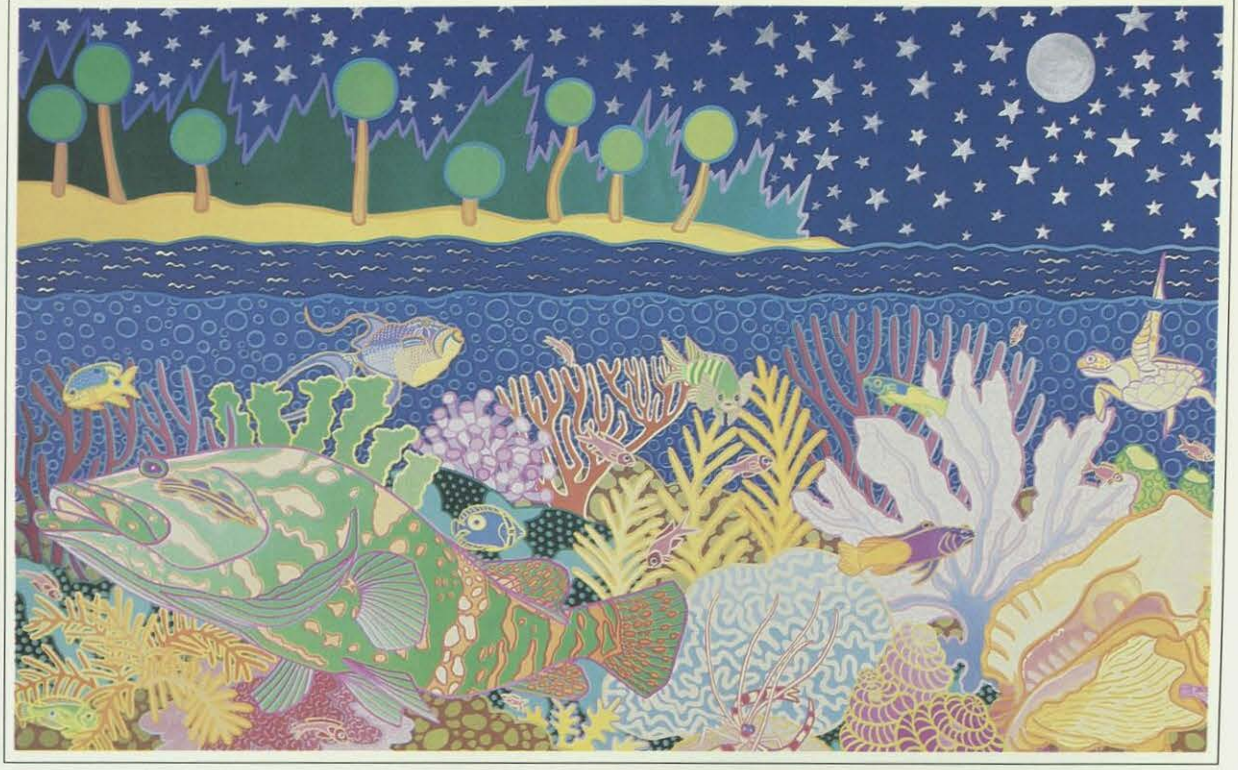
WHITE IBIS *by Dee Smith*



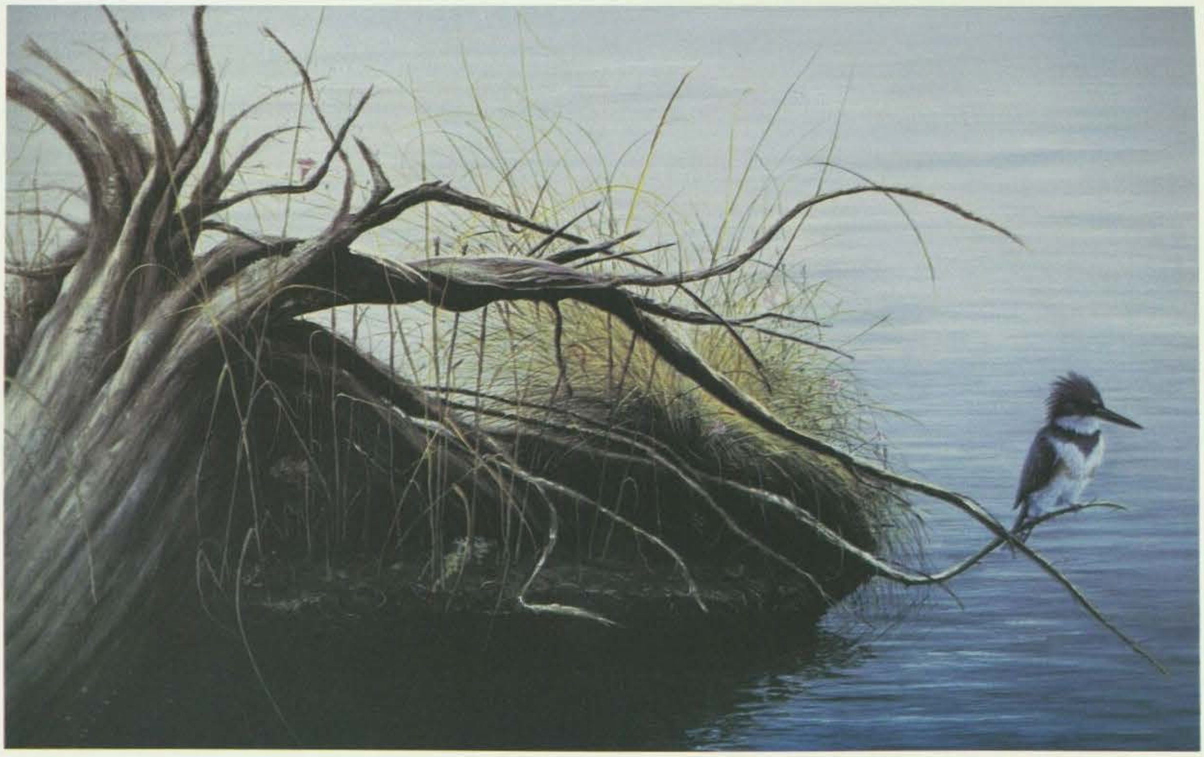
BARRED OWL *by Daniel Ambrose*

▷

# 1992 Cover Art Runners Up

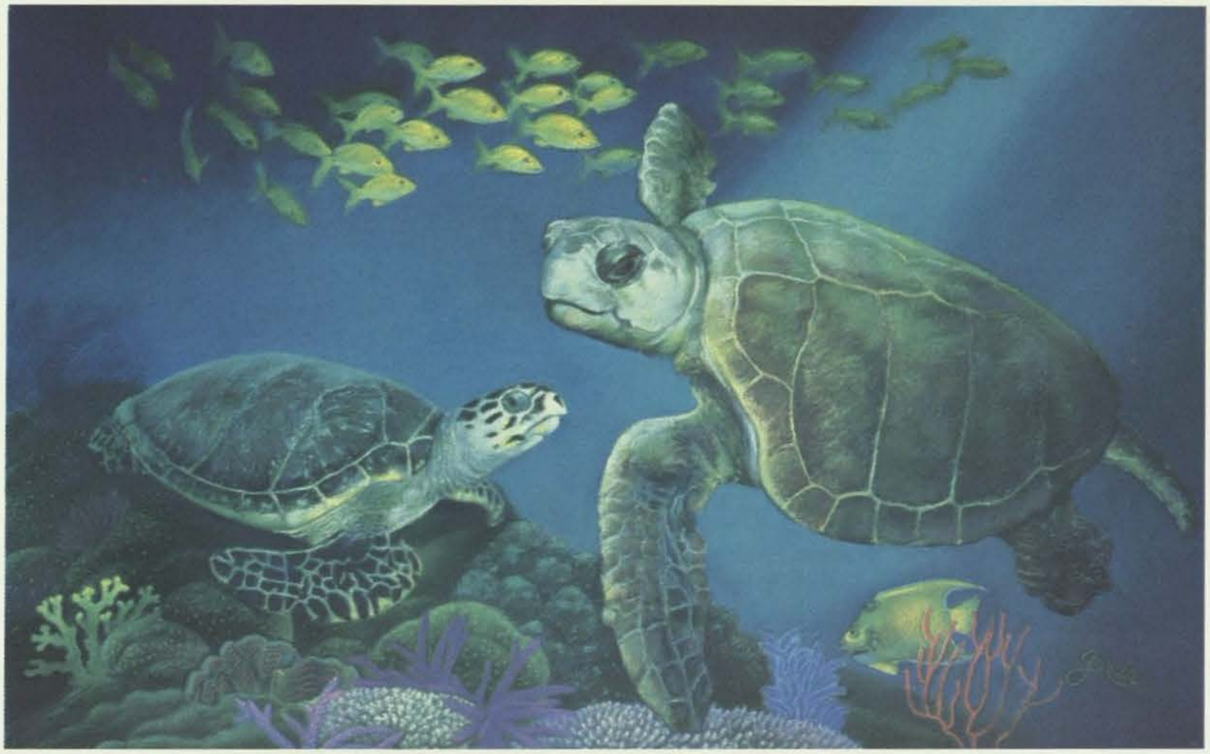


GROUPER, BISCAYNE NATIONAL PARK *by Jan Barwick*

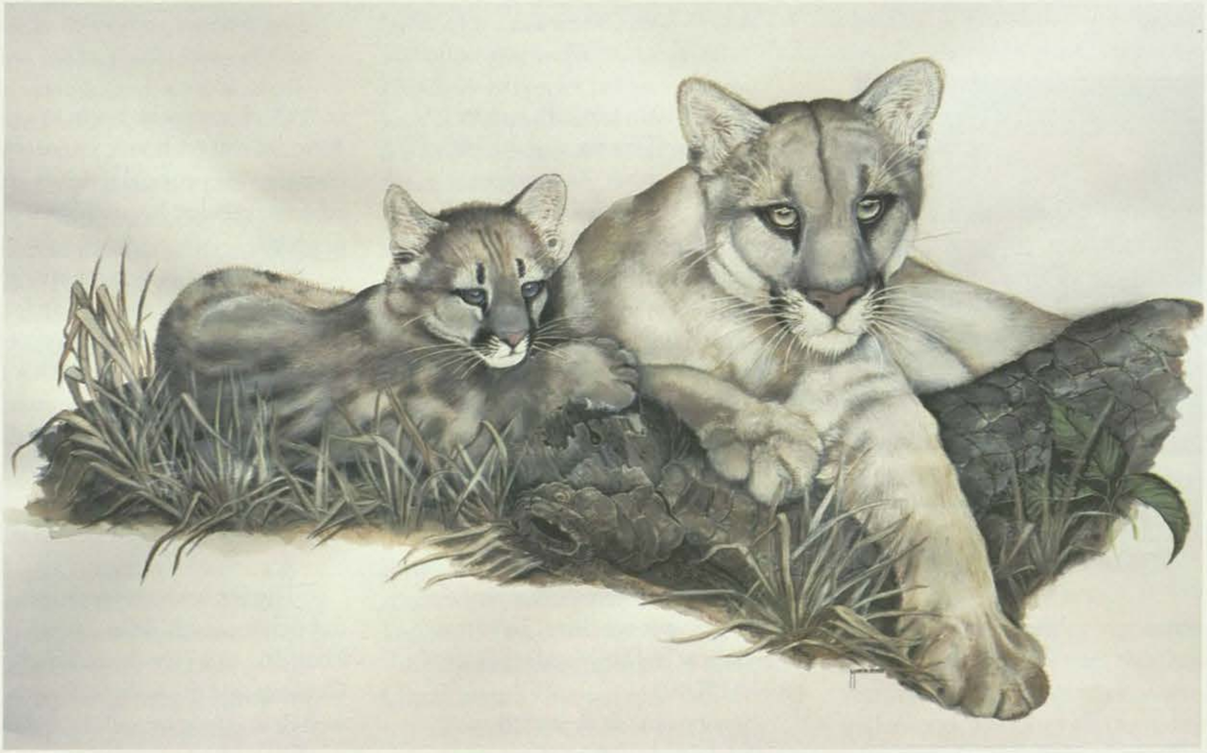


KINGFISHER *by Daniel Ambrose*

# 1992 Cover Art Runners Up



GREEN SEA TURTLES *by Gracia Bennish*



FLORIDA PANTHERS *by Maria Ryan*

CHARLIE HEIDECKER

# The Gopher Tortoise

## In a Race For Survival

By Ann Morrow

CHARLIE HEIDECKER

*Prickly pear cactus flower.*

Over 2,500 years ago, Aesop penned "The Tortoise and the Hare." The fable describes the tortoise's plodding pace as "slow and steady," a virtue that ultimately leads it to victory in a footrace with a hasty but boastful hare.

Today, in Florida, the tortoise is involved in another race — a race for its very survival. At stake are high and dry, sandy soils in which the gopher digs its burrows and which make ideal development sites for Florida's expanding human population. The resulting conflict has led to contentious debate, even among biologists. How many gopher tortoises are there? How many should there be? How and when do we protect them?

Sorting out answers to these questions requires scientific study as well as philosophical debate. After the ecological intricacies begin to unravel, there are still economic impacts to consider and personal motives and ethics to ponder. Invariably, emotions run high.

In the end, protective strategies will evolve from consensus and compromise. An examination of this species and the controversy that has swirled around it during the past 20 years reveals the complexity of the process of protecting a species.

### RANGE AND HABITAT

The gopher tortoise ranges through six states, from eastern Louisiana to southeastern South Carolina and throughout Florida. The well-drained, sandy soils in the southeastern coastal plain are ideal for its burrows and for supporting the

CHARLIE HEIDECKER

*An adult gopher tortoise uses its strong, flattened forelimbs to excavate a tunnel approximately 15 feet long and 6 feet deep. The burrow is a source of food, refuge or nesting habitat for many other species, including the eastern diamonback rattlesnake.*

herbaceous growth on which the species feeds. Wiregrass, broad-leaved grasses and wild legumes are common in the fire-maintained, xeric sandhill habitats preferred by the gopher tortoise.

In Florida, the gopher tortoise is found in all 67 counties, but its distribution in the southern part of our state is spotty because of the predominance of wetlands and the effects of extensive urbanization on suitable habitat.

## THE BURROW

An adult gopher tortoise uses its strong, flattened forelimbs to excavate a tunnel approximately 15 feet long and 6 feet deep. An individual may dig more than one burrow, but usually only one tortoise occupies a burrow.

The burrow not only protects the gopher tortoise from predators, temperature extremes and fire, it also represents a distinct ecological niche. It is a source of food, refuge or nesting habitat for a fascinating array of over 300 other species (60 vertebrates). Hundreds of species of invertebrates such as flies and beetles may feed on the fecal material and other organic debris found in the bottom of the burrow. These organisms may, in turn, feed frogs, toads, mice and rats, which form a prey base for predators such as the eastern diamondback rattlesnake and the eastern indigo snake.

We can only speculate on how many of these species may occupy a burrow at any one time or about the predator-prey relationships within the close confines of a burrow.

"The burrow probably provides a refuge as well as a smorgasbord for some species, particularly snakes," said Joan Diemer Berish, a research biologist with the Florida Game and Fresh Water Fish Commission's Division of Wildlife.

Several of the burrow residents most frequently found, such as the gopher frog, eastern indigo snake, Florida mouse and burrowing owl, are classified as threatened or as species of special concern by the Commission.

## REPRODUCTION

An adult tortoise weighs 7 to 10 pounds and averages 9 to 11 inches in length. It reaches sexual maturity between 10 and 20 years of age and may live 40 to 60 years. The female lays an average of six eggs in a 6-inch-deep nest, often located just outside the burrow. Most eggs and hatchlings never grow to maturity because of heavy predation by raccoons, opossums, gray foxes and armadillos.

## HUMAN IMPACTS

The gopher tortoise was appreciated for its culinary values thousands of years before its ecological ones were understood. Tortoises also have been taken as pets and used in races. They were trapped or snared, or pulled from ▷

their burrows with a long, flexible rod. During rattlesnake roundups, still practiced in some states, participants pour gasoline into burrows to roust reptilian inhabitants. In Florida, it is illegal to use gasoline or any toxic substance to drive reptiles from their retreats.

Human predation has contributed to gopher tortoise population declines, particularly in the Florida panhandle. But, as Florida's population has grown, land-conversion activities have affected a greater number of tortoises. Urbanization tops this list, but agriculture, forestry practices and phosphate mining also have taken a toll. Fire suppression in areas preferred by gopher tortoises also renders habitat less desirable by allowing the woody understory to become too thick, thus shading out herbaceous food plants.

## CONSERVATION EFFORTS

A long succession of regulations designed to protect the gopher tortoise began with a 1972 Commission ban on the sale and export of the species. A possession limit of 10 was added in 1973, and over the next 15 years, restrictions continued to tighten, culminating in a statewide harvest ban in 1988. Gopher tortoise races were outlawed in 1989.

In 1979, the Commission listed the gopher tortoise as a species of special concern, which still allowed a limited harvest.

"Initially, we were conducting research. As we learned more about the species, we lowered the harvest limits," Berish explained. "The gopher tortoise has a low reproductive rate, and the population cannot bounce back quickly after it has been over-harvested."

All of these restrictions addressed the intentional harvesting or "taking" of gopher tortoises. Meanwhile, the pace of upland conversion in Florida had been accelerating, underscoring the most serious threat — the loss of habitat.

The Commission's Office of Environmental Services attempted to address a portion of this problem by recommending the establishment of preserves to offset loss of important tortoise habitat in Developments of Regional Impact (DRI). The Commission had some success in this regard, and numerous areas have been protected within developments or in Commission "mitigation parks." [**Editor's note**: See related story beginning on page 36.]

Nevertheless, most land conversion in Florida involves smaller developments that are not subject to DRI review. As a result, large areas of tortoise habitat continue to be lost or fragmented.

Many biologists and environmentalists were also increasingly concerned about the direct killing of tortoises as a result of development activities. It was not clear whether existing Commission rules even addressed this type of "incidental taking." A growing number of developers and environmentalists wanted to know exactly what permits the Commission requires for development activities that are likely to kill tortoises.

CHARLIE HEIDECKER

*The burrow protects the gopher tortoise from predators, temperature extremes and fire.*

A solution was proposed by Commission staff in July 1990 in the form of an incidental take rule. The proposal established acreage and burrow-destruction thresholds and required mitigation according to the number of affected burrows. Essentially, it required a permit applicant to preserve habitat for tortoises as compensation for incidental destruction of tortoises that might occur. The protected habitat could be on-site, off-site or in regional mitigation parks.

For seven months conservationists, animal rights groups, Commission staff, developers and agricultural interests offered compelling arguments on both sides of the issue. Because of uncertainties over a number of legal and biological issues, the Commission decided to discontinue the rule-making process.

This left the agency with an existing rule that required that a permit be obtained from the executive director for any "taking" of a species of special concern, but the rule included no specific guidance for such permitting. The Commission subsequently approved an interpretation of the existing rule that "taking" of tortoises as a result of bulldozing, grading, paving or construction would require a permit. Permits could be obtained for relocation of animals, or separate permits could be obtained for "incidental take" with habitat protection used as mitigation for the loss of individuals.

## RELOCATION

One of the ongoing controversies, even among tortoise allies, is the proper role of tortoise relocation in the conservation of the species.

Tortoise relocation, moving the animal out of harm's way to another site, is often a very attractive alternative for many developers, appealing to environmentalists and animal rights proponents because it avoids the immediate death of the animal. Normally, however, it provides little benefit to the long-range conservation of the species and may pose other risks. There's no guarantee that relocation sites on private lands won't, in turn, be developed and that any survivors of the first move won't be dug up and relocated again. Public lands frequently have adequate levels of tortoises, and stuffing more into an area does no good and may cause problems. There is also the possibility of introducing diseases or even undesirable mixing of genetic material.

Relocation may have merit where a stocking program is needed as a result of having unoccupied or depleted habitat. In peninsular Florida, where most developer/tortoise conflicts occur, there are few areas identified as needing restocking. Simply concentrating animals into increasingly smaller areas of remaining habitat is not the answer. Trying to protect at least a portion of the habitat base is thought by most tortoise biologists to be a better solution.

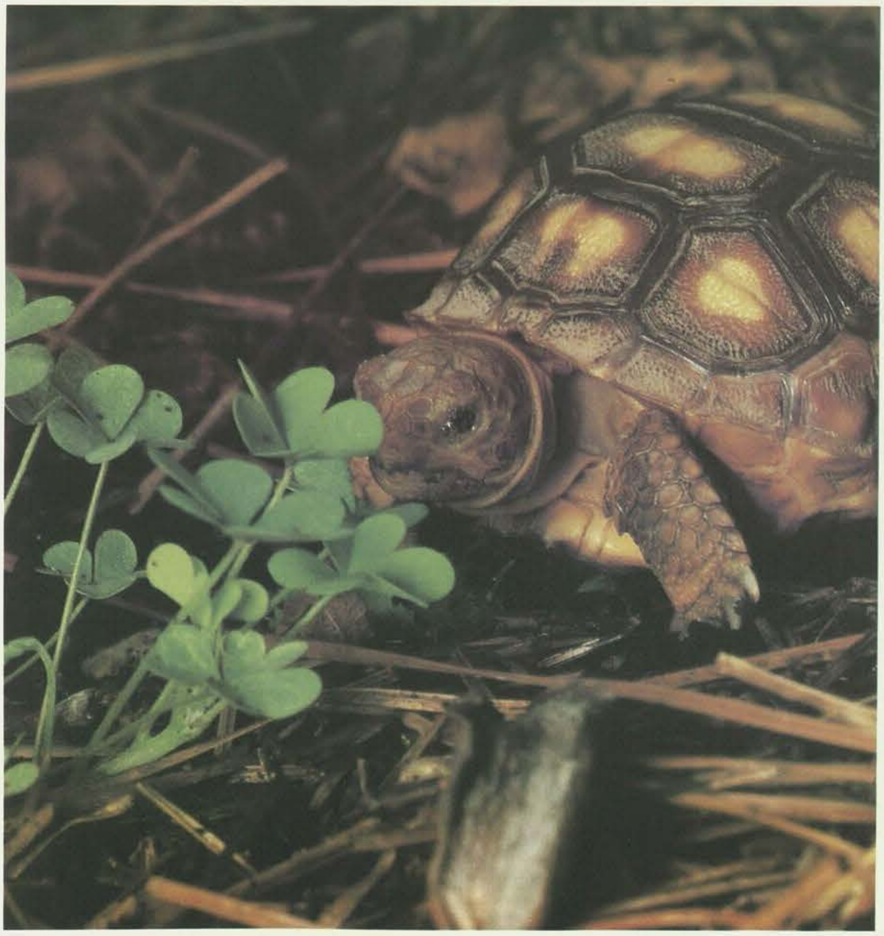
## THE FUTURE

A good conservation strategy is one that continues to evolve and remain sensitive to the changing needs of an organism. Current regulations affecting gopher tortoises address the animal or the burrow, rather than the habitat. The future may require a shift in this emphasis.

"We need to make a move now to focus on upland acquisition," Berish said. "Ideally, I would like to see a major slowdown of land modification. But realistically, we need to identify critical habitat now and properly manage the publicly owned properties."

The gopher tortoise is fortunate that its many advocates stand by, ready and willing to coach it to the finish line. With responsible land stewardship, all participants may be able to taste victory.

*Ann Morrow is a free-lance writer specializing in natural history topics. She is a frequent contributor to FLORIDA WILDLIFE.*

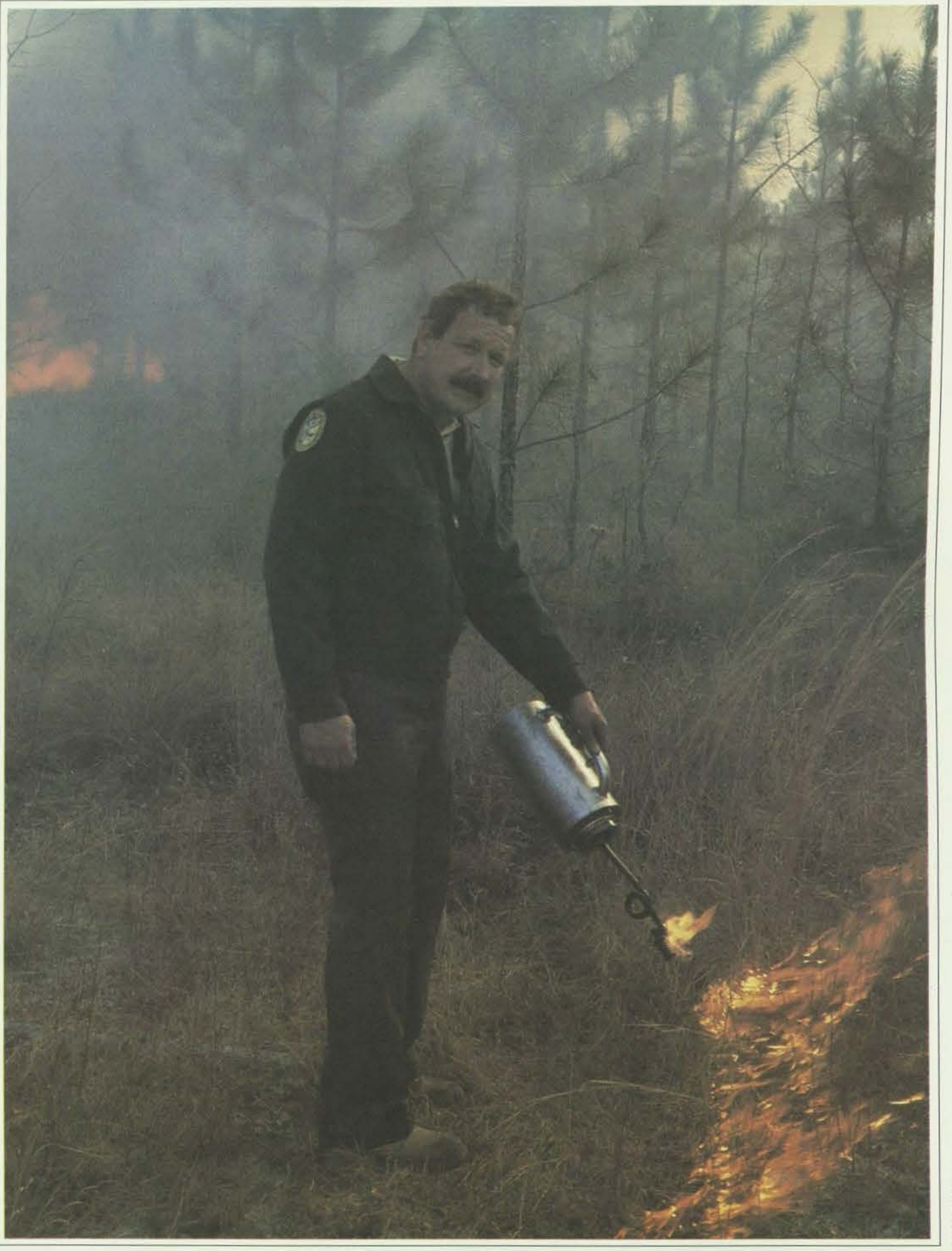


WILLIAM J. WEBER

*The shell of a young gopher tortoise is more colorful than an adult's.*

# Mitigation Parks

By Mary M. Davis



MIKE ALLEN

*Terry Gilbert oversees a controlled burn at Branan Field.*

Small, isolated tracts of undeveloped land amid houses, golf courses and shopping centers often do not provide enough suitable habitat for wildlife. That's why Florida Game and Fresh Water Fish Commission biologists have devised a plan based on the principle that one big piece is better than lots of little pieces. Rather than leaving small portions of their projects undisturbed, developers can contribute to a mitigation fund to purchase larger tracts of valuable wildlife habitat elsewhere.

"On-site habitat preservation is not always the best solution," said Brad Hartman, director of the Commission's Office of Environmental Services. This branch of the Commission is charged with protecting important fish and wildlife habitat, especially that required for species listed as endangered, threatened or of special concern. Game and other nongame wildlife also benefit from habitat preservation.

"When endangered species are involved, on-site protection is often the most appropriate strategy," Hartman said. "But if a developer cannot provide sufficient habitat along with the management necessary to ensure the long-term survival of wildlife, then off-site mitigation is often a better alternative for threatened species or species of special concern."

OES biologists survey habitats on areas slated for development and provide the various federal, state and local regulatory and planning agencies an assessment of habitat types, conditions and fish and wildlife use of proposed development sites.

"We do this before these agencies issue construction permits, so plans can be altered if there will be a detrimental effect on wildlife species listed for protection," Hartman said. "Some of Florida's habitat types, such as tropical hardwood forests, oak scrubs and longleaf pine/wiregrass communities, are disappearing rapidly, and the animals that depend on these habitats will soon follow."

The scrub lizard and scrub jay are two rare creatures that live only in Florida's scrub oak habitat. Longleaf pine sandhills are home to red-cockaded woodpeckers, gopher tortoises and gopher frogs.

While on-site land preservation met the needs of some wildlife populations, long-term survival of other species was unlikely, biologists discovered. The small, isolated tracts, in most cases less than 50 acres in size, sometimes could not support even a single breeding pair of the target species, much less a healthy, viable population. Tracts often were fragmented or surrounded by high-intensity development, subjecting wildlife to excessive noise, traffic and domesticated animals. Nearby residents and business owners were reluctant to tolerate controlled burning, which is necessary to maintain some habitat types.

And without fencing and public awareness campaigns, the land set-asides were soon used for illegal dumping, target shooting and off-road vehicle operation, causing the target species to abandon the sites.

"Mitigation parks give us a second option that is often more agreeable to developers and is in the best interest of the species we are trying to protect," Hartman said.

In 1988, OES biologists and a Duval County developer negotiated the Commission's first off-site habitat preservation deal. The developer could proceed with his plans, without preserving land on-site, if he contributed money to a land acquisition trust fund. The money would be used by the state to purchase land of the same habitat type and acreage that would have been preserved on-site.

"By pooling funds from several developers, we could purchase and preserve a large tract of habitat to which access could be controlled and which could be managed as required for specific listed species," Hartman said.

"Mitigation parks are designed to be at least several hundred acres in size, or be adjacent to other publicly owned lands," said Mike Allen, an OES biologist actively involved in the mitigation park process. "Given the size of the parks, more individuals of a listed species can be protected than would ever be possible with on-site preservation. This helps buffer the populations against the consequences of disease or periods of environmental stress."

Because these parks are owned by the state, human uses and disturbances can be strictly regulated. And developers often find the cost of land in a mitigation park cheaper than setting aside prime real estate at the actual development site.

The Commission has established two mitigation parks in the past four years. The first land transferred to the Commission through developer mitigation established the Perry Oldenburg Mitigation Park in Hernando County. The park features a longleaf pine/wiregrass plant community and is near the Commission's Chinsegut Nature Center. The park is named in memory of an OES biologist who was instrumental in founding the program. Oldenburg died of leukemia in 1990.

Branan Field Mitigation Park in Duval and Clay counties is adjacent to the Jennings Forest Wildlife Management Area. This park features dry flatwoods, mesic flatwoods, turkey oak ridges and cypress swamps.

Hartman said the Commission has secured options to purchase acreage in each of the established parks as mitigation funds become available. The Commission is actively pursuing mitigation park sites throughout the state, so the program will become available to planning councils and regulatory agencies who want mitigation funds to purchase land in their areas.

The Commission credits the Trust for Public Land, Florida Defenders of the Environment and the Northeast Regional Planning Council for their assistance in establishing the land acquisition trust fund to create the mitigation park program.

For more information about the Commission's mitigation park program, contact Mike Allen at the Florida Game and Fresh Water Fish Commission at (904) 488-6661. ◆

*Mary M. Davis is a public information specialist in the Commission's Tallahassee office.*

# Delicate Balance

Species: Snowy Plover (*Charadrius alexandrinus tenuirostris*)
Florida Status: Threatened
Federal Status: Candidate for listing

Have you ever been startled, on a quiet seaside stroll, by a bit of the beach suddenly taking motion almost underfoot? If it transformed into a small, black-legged, sandy-backed bird racing down the strand, you may have happened upon a Florida rarity — the snowy plover.

Fewer than 200 pairs of this shy species still dwell on the Gulf beaches of Florida and Alabama. Throughout its range in the Southeast, the snowy plover's requirements for tranquil, open, sandy beaches to breed and feed on are in direct conflict with intensifying human use.

Snowy plovers need at least two solid months of undisturbed time on their small bit of beachfront if they are to rear chicks to maturity. And that's in a good year, when predation is low and spring storms are gentle. Plovers typically locate their nests (actually simple scrapes in the open sand) above the storm-tide line, but in front of the primary dunes. Fine bird tracks may crisscross the paths to these nests, which are in clear view of the Gulf, yet well-camouflaged with vegetation, driftwood or a few shells.

Both parents share incubation of their eggs and remain attentive until the chicks fledge and can fend for themselves. Snowy plovers are generally quiet birds, but if predators threaten their eggs or chicks, parents will employ remarkable distraction strategies. Like the closely related killdeer, plovers will call out, then run short distances or feign a broken wing to divert a predator's attention away from the nest. However, if frequent human use of an area consistently keeps plovers off their nest, the birds invariably abandon the site.

Snowy plovers feed mainly in tidal pools and at the surf line of sandy beaches, but they also venture along freshwater inlets to procure small crustaceans, mollusks and worms.

Snowy plovers are sometimes confused with piping plovers. Darker legs, a slightly longer and more slender bill, a darker eye patch and a generally more pale coloration distinguish the snowy.

All nesting shorebird populations, including snowy plovers, have declined significantly in Florida due to loss of beach habitat to development. Less than half of the state's sandy coastline remains in its natural state, and on these remaining beaches, human visitors and their dogs seriously disrupt nesting birds. Tampa Bay and Charlotte Harbor once supported substantial breeding populations of shorebirds, including snowy plovers. Today, those nesting sites are all but eliminated and the birds are largely confined to panhandle beaches. Biologists believe that nesting success and the total number of snowy plovers in Florida could be increased by restricting vehicular traffic and keeping pets leashed or off beaches, concentrating human activities and posting nesting areas against trespass.

(More details about snowy plover status and distribution are available in the 1989 Nongame Wildlife Section progress report, "Snowy Plover Breeding Distribution," prepared by Charles Chase and Jeffery Gore.)

— Susan Cerulean

ACADEMY OF NATURAL SCIENCES–PHILADELPHIA

# IT'S A CROC!

By Gary E. Sabbag
Photos by Stephen R. Millosin

*Stealthily, silently, the crocodile stalks its prey. Floating idly, camouflaged in the brown, tannin-stained, brackish water, it watches. Piercing eyes survey the canal — pearly white, sharp teeth are ready. Alert to all sights and sounds, the crocodile waits.*

*Suddenly there's movement in the shallow, murky water. Unsuspectingly, a catfish swims dangerously close. The crocodile seizes the opportunity. With a quick lunge and snap, the crocodile catches the catfish in its powerful jaws. A jerk-back of the head, a readjustment of the prey, a bone-crushing crunch, and the catfish is subdued. Once within striking range, the catfish didn't stand much chance of escaping the grasp of the mysterious American crocodile of Everglades National Park.*

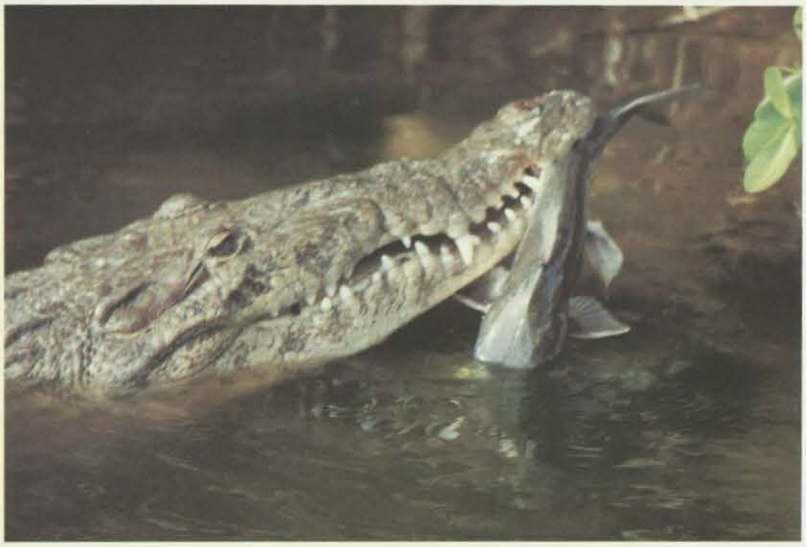
The American crocodile prefers salt water, but it also inhabits brackish estuaries and has been found miles inland preying upon freshwater fish.

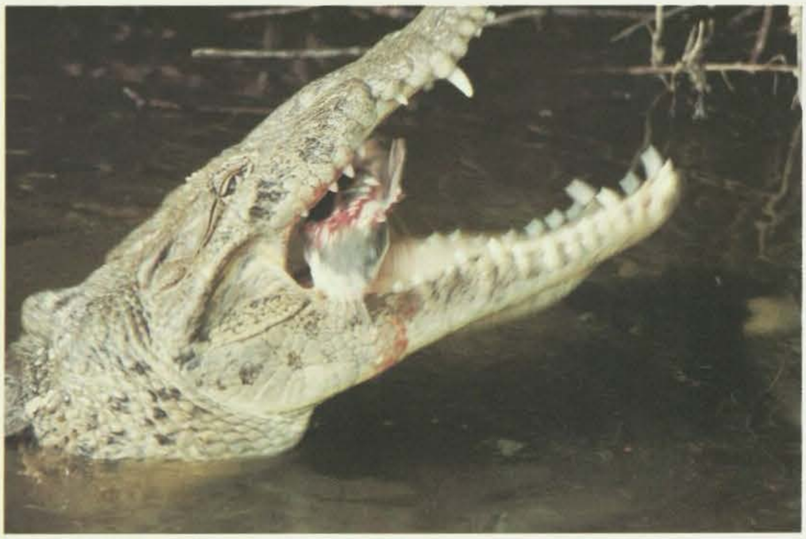
Crocodiles differ from alligators in that their snouts are triangular, and more pointed than the alligator's rounded snout. The crocodile has a characteristically exposed fourth tooth in its lower jaw; the alligator's fourth tooth fits into a slot in its jaw.

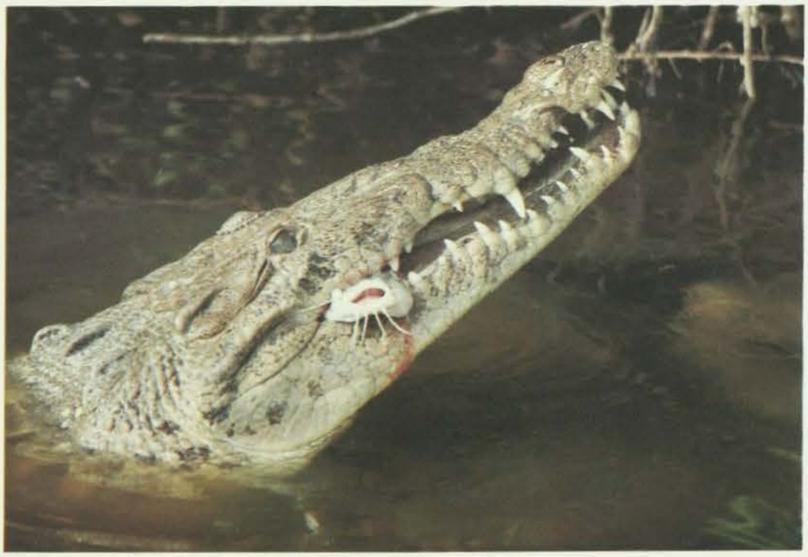
Historically, this reptile once inhabited most of the coast of south Florida. Today, though, the crocodile's stronghold is in the Florida Bay vicinity, with half of the population within Everglades National Park.

With ongoing Everglades conservation efforts, there seems to be a glimmer of hope that the American crocodile can survive and thrive.

*Gary E. Sabbag lives and works in Everglades National Park. Stephen R. Millosin is a free-lance photographer who specializes in wildlife photography.*







# Record Fish Update

By Scott Ball

Records were made to be broken, according to the old saying. Accordingly, four Florida freshwater fish records, including one of the oldest, have fallen during the past year.

Until January, no one had caught a bigger black crappie than the 3.75-pound fish landed in 1964. Although not verified by Commission biologists, the catch was considered an uncertified state record, based on reliable witness accounts. The certified record crappie, caught in 1988, weighed 3.5 pounds. Both records were eclipsed in January when Ben F. Curry Sr. of Quincy used a cane pole to pull a 3.83-pound crappie from Lake Talquin.

Last summer, the flathead catfish was one of four newcomers to the Game and Fresh Water Fish Commission's list of record fish. Since then the record has been set, broken, and broken again. In August, 7-year-old Michael Ranew of Chattahoochee caught the first record flathead from the Apalachicola River; it weighed 25.48 pounds. In April, Mike Crews of Fountain broke that record when he reeled in an Apalachicola River flathead weighing 27.75 pounds. Less than a month later, Todd Lewis of Grand Ridge topped that mark with a 33.09-pounder, also from the Apalachicola.

Speaking of catfish, Jim Miller of Inverness broke the 7-year-old record for white catfish in September by catching one that weighed 18.88 pounds from the Withlacoochee River. Miller's fish was 2.13 pounds heavier than the previous record, set in 1984. It also qualified as an all-tackle world record, according to the International Game Fish Association, outweighing the previous mark, a California fish caught in 1981, by 7/10 pound.

The most breakable record these days seems to be for the butterfly peacock bass. Biologists first released this South American native in 1984 to prey on the prolific exotic fish that were crowding out native species in south Florida waters. After allowing time for the fish to grow and spawn, the Commission declared the butterfly peacock bass legal for harvest in 1989.

The first record butterfly, caught in November of 1990, weighed 5.36 pounds. Since then the mark has been set four times. Last year, biologist Paul Shafland, who directs the Commission's peacock research, said he wouldn't be surprised to see a 7.5-pounder one day. Shafland's prediction nearly came true in April when Roberto Duran of Miami became the fifth record holder. Fishing in a canal adjacent to the Miami International Airport, he caught a butterfly peacock bass that tipped the scales at 7.41 pounds. Prior to Duran's catch the record was 6.98 pounds.

The Commission's Record Fish Program recognizes 32 species of freshwater fish. For anglers whose catches don't break a record but still are big enough to warrant official acknowledgment, the Commission sponsors the Big Catch Program. Applications and other information about either program are available at any Commission office.

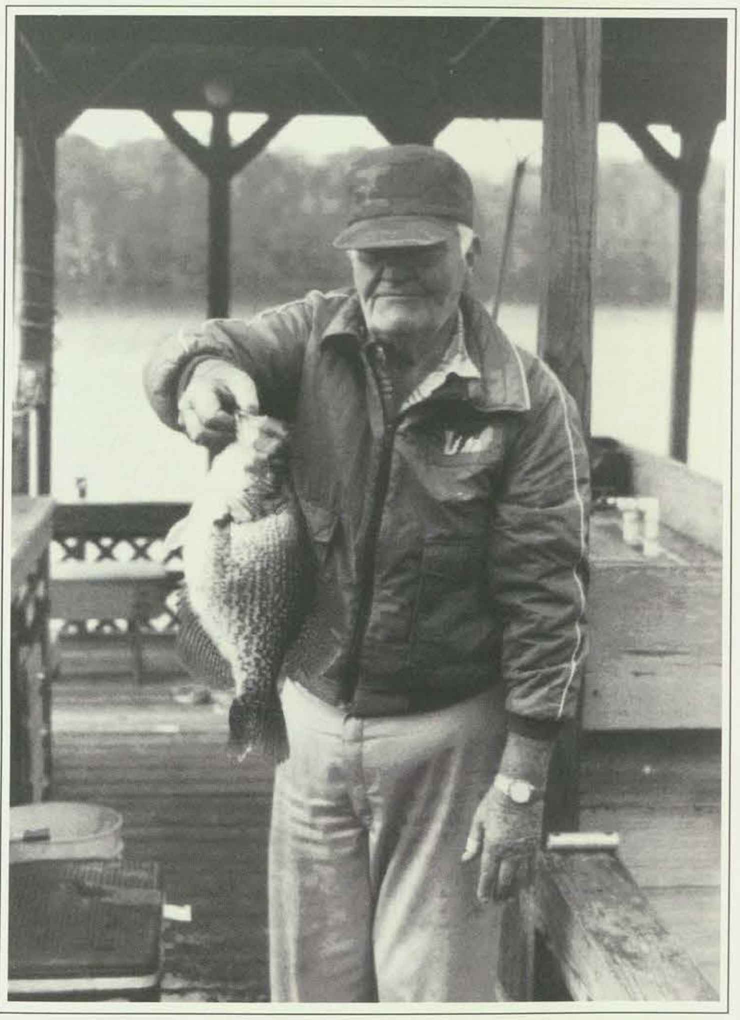
## FLORIDA RECORD FRESHWATER FISH PROGRAM
## CERTIFIED STATE RECORDS THROUGH MAY 1992

| SPECIES | OFFICIAL WEIGHT | ANGLER, CATCH DATE & LOCATION |
|---|---|---|
| Largemouth bass | 17.27 pounds | Billy M. O'Berry, July 6, 1986<br>Unnamed lake, Polk County |
| Largemouth bass | 20.13 pounds<br>NOT CERTIFIED | Frederick Joseph "Fritz" Friebel, May 1923<br>Big Fish Lake (private), Pasco County |
| Redeye bass | 7.83 pounds | William T. Johnston, Feb. 18, 1989<br>Apalachicola River, Gadsden County |
| Spotted bass | 3.75 pounds | Dow Gilmore, June 24, 1985<br>Apalachicola River, Gulf County |
| Suwannee bass | 3.89 pounds | Ronnie Everett, March 2, 1985<br>Suwannee River, Gilchrist County |
| Striped bass | 38.56 pounds | Justin McAlpin, Nov. 15, 1979<br>Lake Seminole, Gadsden County |
| White bass | 4.69 pounds | Richard Steven Davis, April 9, 1982<br>Apalachicola River, Gadsden County |
| Sunshine bass | 16.31 pounds | Thomas R. Elder, May 9, 1985<br>Lake Seminole, Jackson County |

| SPECIES | OFFICIAL WEIGHT | ANGLER, CATCH DATE & LOCATION |
|---|---|---|
| Butterfly peacock bass | 7.41 pounds | Roberto Duran, April 19, 1992<br>Airport Lakes, Dade County |
| Black crappie | 3.83 pounds | Ben F. Curry Sr., Jan. 21, 1992<br>Lake Talquin, Gadsden County |
| Bluegill | 2.95 pounds | John R. LeMaster, April 19, 1989<br>Crystal Lake, Washington County |
| Redbreast sunfish | 2.08 pounds | Jerrel R. DeWees Jr., April 29, 1988<br>Suwannee River, Columbia County |
| Redear sunfish | 4.86 pounds | Joseph (Joey) Marion Floyd, March 13, 1986<br>Merritt's Mill Pond, Jackson County |
| Spotted sunfish | 0.83 pounds | Coy Dotson, May 12, 1984<br>Suwannee River, Columbia County |
| Warmouth | 2.44 pounds | Tony David Dempsey, Oct. 19, 1985<br>Yellow River (Guess Lake), Okaloosa County |
| Flier | 1.06 pounds | Justin McAlpin, July 5, 1985<br>Lake Iamonia, Leon County |
| Chain pickerel | Qualifying weight —<br>4 pounds | VACANT |
| Chain pickerel | 8.00 pounds<br>NOT CERTIFIED | Jimmy James, July 5, 1971<br>Lake Talquin, Gadsden County |
| Redfin pickerel | 1.05 pounds | Robert E. Wilcox Jr., July 18, 1986<br>Jr. Walton Pond, Okaloosa County |
| Carp | Qualifying weight —<br>25 pounds | VACANT |
| Carp | 40.56 pounds<br>NOT CERTIFIED | Bernard Lee Rowan, May 24, 1981<br>Apalachicola River, Gadsden County |
| Oscar | 1.36 pounds | Brian D. Hilton, Dec. 30, 1990<br>Everglades Conservation Area, Broward County |
| Oscar | 1.56 pounds<br>NOT CERTIFIED | William H. Jackson, Jan. 8, 1992<br>Alligator Alley Canal, Collier County |
| Skipjack herring | Qualifying weight —<br>2.5 pounds | VACANT |
| Channel catfish | 44.50 pounds | Joe Purvis, May 19, 1985<br>Lake Bluff, Lake County |
| White catfish | 18.88 pounds | Jim Miller, Sept. 21, 1991<br>Withlacoochee River, Marion County |
| Blue catfish | 53.00 pounds | Eddie E. Flowers, Oct. 28, 1990<br>Escambia River, Santa Rosa County |
| Flathead catfish | 33.09 pounds | Todd Lewis, May 9, 1992<br>Apalachicola River, Jackson County |
| Brown bullhead | 3.44 pounds | Arthur M. McIver, Aug. 30, 1989<br>Watertown Lake, Columbia County |
| Yellow bullhead | Qualifying weight —<br>2 pounds | VACANT |

| SPECIES | OFFICIAL WEIGHT | ANGLER, CATCH DATE & LOCATION |
|---|---|---|
| Black bullhead | Qualifying weight — 2 pounds | VACANT |
| Bowfin | 19.00 pounds | Jim Brown, Nov. 5, 1984<br>Lake Kissimmee, Osceola County |
| American shad | 5.19 pounds | Bud Dankert, Feb. 15, 1990<br>St. Johns River, Seminole County<br>and Albert M. Judy, March 18,1992<br>St. Johns River, Volusia County |
| Longnose gar | 41.00 pounds | Evan D. Merritt, April 14, 1985<br>Lake Panasoffkee, Sumter County |
| Florida gar | 7.00 pounds | Greg Rozycki, June 28, 1988<br>Oklawaha River, Putnam County |
| Alligator gar | 122.00 pounds | Michael Horton Booth, Sept. 19, 1987<br>Escambia River, Escambia County |

Ben F. Curry Sr. caught the new state record black crappie on Lake Talquin Jan. 21. The fish weighed 3.83 pounds.



JEFF NORDHAUS

# Outdoor Library

## FROM BAUHAUS TO BIRDHOUSE

By Leslie Garisto

"From Bauhaus To Birdhouse" is a delightful examination of avian housing, as well an informative guide for choosing, collecting, buying, building and placing a birdhouse. This charming book examines wildly imaginative architectural styles of housing for the feathered community. (The "Bauhaus" referenced in the title is a 20th century architectural style.)

The author presents functional and fanciful styles of contemporary and antique birdhouses ranging from rustic, wooden birdhouses to modern and postmodern reproductions of famous buildings. Designers have created remarkable houses that match their surroundings, be it a multi-story New York City style tenement-inspired building, a fish camp storefront, a lighthouse, a country woodshed or a gracious mansion adorning a well-manicured lawn.

Birds represent a highly accurate gauge of nature's state of health, warning us of troubles that may still remain unseen and unheeded. Backyard birdhouses can have a dramatic effect on resident and migratory bird populations. The author asserts that the vast majority of birdhouses have always taken their architectural cue from human habitations. The book features beautiful four-color photographs of elaborate dovecotes and martin homes, which had their beginnings in rural agricultural settings. Fanciful critter-shaped homes and even whimsical fast-food restaurants are among the numerous contemporary designs pictured in this title.

This is an interesting little book, although probably not suited for serious birders, since it does contain at least one old wives' tale (about the number of mosquitoes that purple martins eat). Architecture is certainly the focus of the text, with interesting tidbits on collecting and displaying birdhouses in gardens and even as decorative items inside the home. The book lists designers, manufacturers, distributors and retailers and covers materials and essentials of construction, although this is certainly not the thrust of the text.

HarperCollins Publishers, April 1992. 87 pp., blueprints, index. $20. hardbound. ISBN 0-06-016742-4

— Andrea H. Blount

## TIDAL MARSH PLANTS

By Lionel N. Eleuterius

Dr. Lionel Eleuterius is a botanist at Mississippi State University, where he is in charge of the botany section of the Gulf Coast Research Laboratory. His extensive background in the study of tidal marsh plants is evident in this new book, which promises to be indispensable to anyone needing to be familiar with coastal marsh habitats.

"Tidal Marsh Plants" is sufficiently versatile to be used in the classroom, as a field guide for natural resource professionals, or by hunters, fishermen or others with more than a passing interest in marsh habitats. It is intended to assist in identification of native coastal salt marsh species and will be useful in plant identification from New England to Texas. However, it can be considered a comprehensive guide in marshes from Mississippi to South Carolina.

This plant guide contains sections on taxonomy (classification), phenology (flowering characteristics), and gives a good treatment on the general ecology of tidal zones. Detailed descriptions and illustrations of over 400 plants are included. Line drawings, useful in identification, are excellent, and eight pages of color photo plates are also useful and of high quality.

Most wildlife biologists, ecologists and naturalists will want this book as an addition to their libraries. The $25 price tag may discourage some, especially casual users, but this book is probably one of the best field guides to coastal marsh plants and habitats published to date.

Pelican Publishing Co., Gretna, La., 1st Pelican edition, August 1990,160 pp.; 7 x 10 color plates ISBN: 0-88289-795-0 $24.95.

— Hugh Boyter
Division of Wildlife

# *It's The Law*

By Inspector Kyle W. Hill

**Question: There's a large alligator in the canal next to my home. It hasn't posed a problem, but I recently saw some people feeding it. Isn't feeding alligators illegal?**

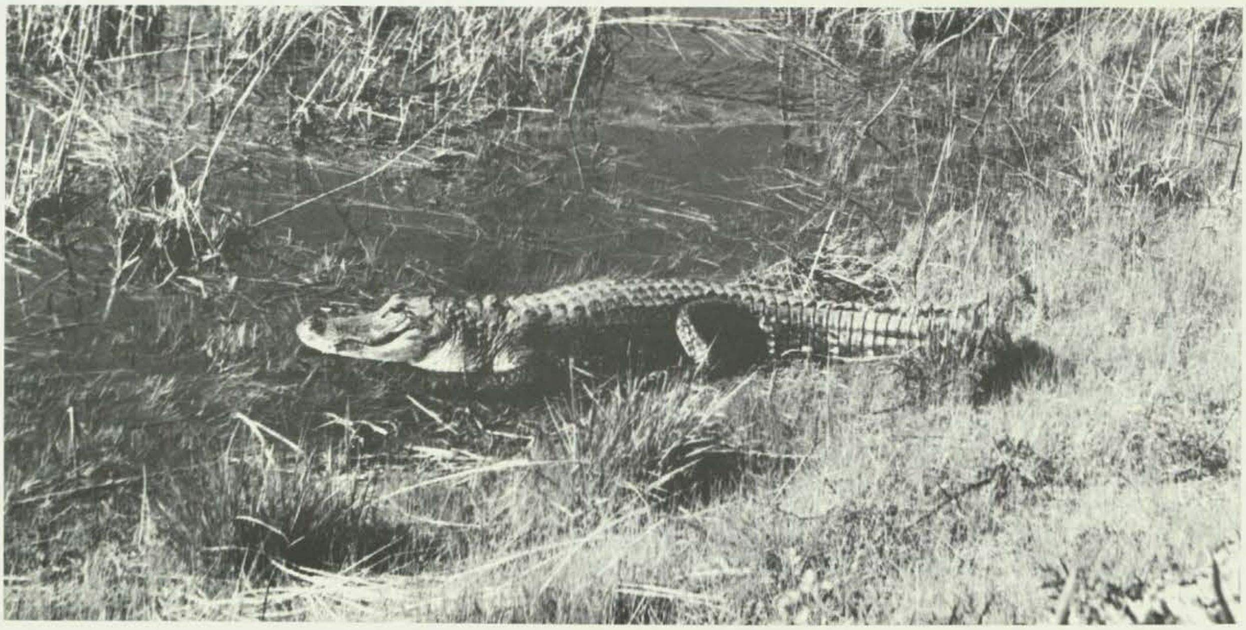
Answer: It certainly is illegal, and dangerous, too. Persons feeding alligators can be charged with criminal violations and face fines of up to $500. The law is designed to protect humans as well as wild alligators. When conditioned by feeding, alligators lose their natural fear of people and associate humans with food. Once an alligator reaches 4 feet in length, it has no natural predators, except man. If the alligator comes to associate man with a handout, aggression toward humans soon follows. Large alligators that are conditioned to feeding by humans can be very dangerous.

The best action is to educate your neighbors about the dangers of feeding alligators. If they continue feeding gators, report them through Wildlife Alert to the nearest Commission office (see page 48). If the alligator is over 4 feet long and begins to show aggression toward humans, livestock or pets, contact the Commission. A professional alligator trapper will be dispatched to capture the animal. Nuisance alligators are not relocated, but are harvested by the trapper. We have found through experience that if an alligator presents a hazard at one location, it will be a hazard elsewhere. There are few wilderness areas left in Florida where alligators will not come into contact with people. In addition, most zoos have all the alligators they want, so there is no safe place to relocate nuisance alligators.

Alligators are still protected in the wild, and except during a highly regulated season in September, the killing of alligators is illegal and punishable by a $5,000 fine and/or five years in jail.

If the Commission did not remove potentially dangerous alligators from urban situations, public opinion likely would turn against the alligator. This would make it difficult for wildlife officers to obtain convictions in court against violators who illegally kill alligators. So the removal of nuisance animals is vital to the well-being of the overall alligator population.

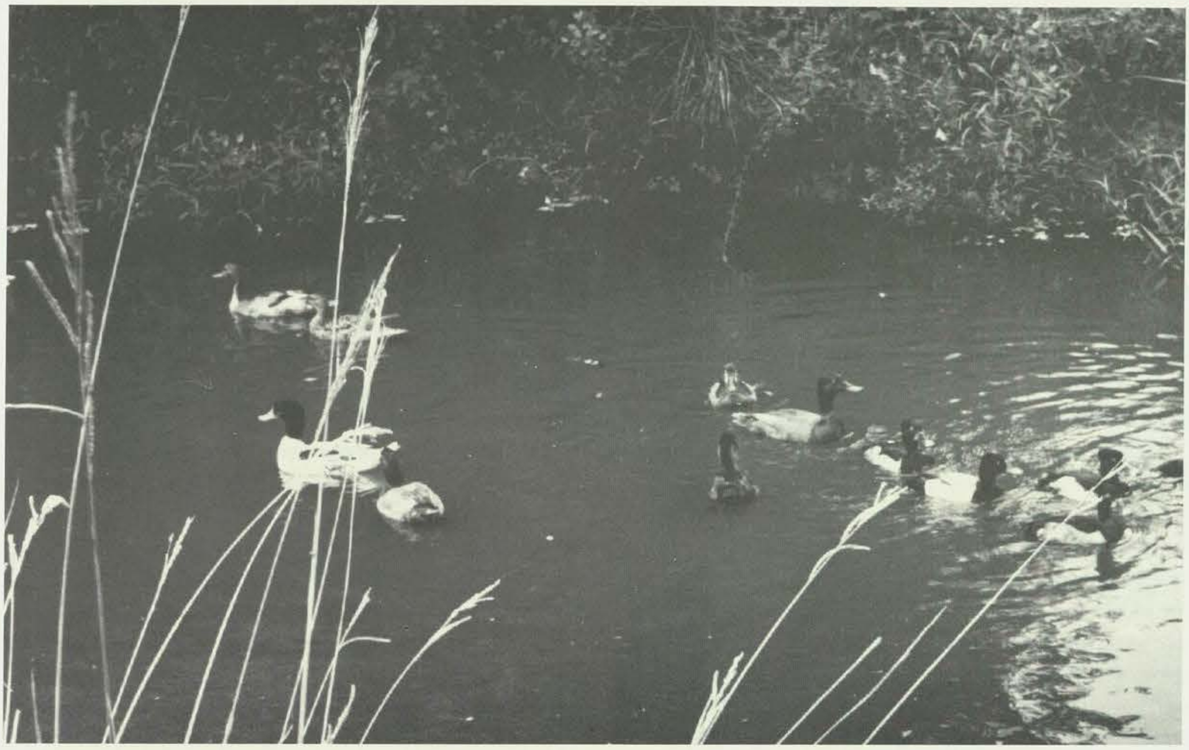
Alligators are a natural and important part of Florida's ecology. Working together with an understanding for the real needs of wildlife, this agency and Florida citizens can ensure the survival of this species for future generations.



GFC

# Hunter Education

By Captain Ed Tyer



GFC

Hunting season is just around the corner. Well, maybe not just around the corner, but it *is* only a few months away. The early duck season will be here before you know it, and it's certainly not too soon to start getting ready. Successful wing shooting takes good hand-eye coordination, a properly fitted shotgun and a lot of practice.

An economical and fun way to develop hand-eye coordination is a to use a BB gun with the sights removed. You'll need a safe shooting area — make sure you don't underestimate the range and power of an airgun. You'll also need a number of cardboard disks 8 inches in diameter and smaller.

From a safe position, have someone throw an 8-inch disk into the air. With both eyes open, bring the gun to your shoulder, point it at the disk and fire when you see the target aligned with the barrel of your gun. As with all types of shooting, be sure to follow through. This means to keep following the target with the gun after the shot until you have allowed sufficient time for the projectile to pass the target. Stopping movement of the gun as you shoot or dropping your gun too soon will ensure a miss. Once you master hitting the 8-inch disk, make a smaller one and continue reducing the size of the disk.

This training method has been around a long time and is used by a number of programs. The military uses it for teaching instinctive style shooting, or "point shooting," as some refer to it.

As you become adept with the airgun, you will improve your shotgun proficiency as well. Round out your pre-season practice with a few trips to the trap or skeet range, and next season you will be able to leave your list of excuses at home.

The fundamentals of safe gun handling and the basics of shooting apply to all types of shooting equipment. A comfortable position, proper grip and breath control, correct sight alignment, the right trigger control and following through are the basics for most shooting applications. When you start missing your target often, go back to the basics.

# Conservation Update

Compiled by Scott Ball

## SHAFLAND RECEIVES CONSERVATION AWARD

Fisheries biologist Paul Shafland was one of 25 conservationists who recently received the Chevron Conservation Award. The awards, which recognize individuals and organizations in North America that serve as environmental role models, were presented during a ceremony in Washington, D.C.

"Throughout this country, there are people who, through education, action and, often, great personal sacrifice, make it a point to be part of the conservation solution," said Ed Zern, director of the Chevron Conservation Awards Program. "Their work betters everyone's world and sets the stage for continuing improvement."

Shafland heads the Commission's exotic fisheries laboratory in Boca Raton. Its main mission is to search for ways to minimize the ill effects of accidental introductions of non-native fish in Florida waters.

In presenting the award to Shafland, Chevron made note of his work with peacock bass — one of the lab's better-known success stories. The peacock bass is a native of South America and was first stocked in south Florida in 1984 in an effort to control other exotic fish that were crowding out native fish. Not only is the peacock fulfilling its role as a predator, it also is an excellent sport fish that doesn't pose a threat to other Florida bass species.

"Sometimes in science, the best advancements are simple — if only we'd known it when we first began," Shafland said, referring to the success of the program. He studied years of research information before stocking peacock bass in south Florida canals.

At the ceremony Shafland received a bronze medallion and a $1,000 honorarium.

## SUMMERTIME IS SKEETER TIME

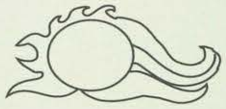
For all the fun and joy that summertime brings, we have to endure a little bad that comes with the good — like mosquitos. This year the Department of Agriculture and Consumer Services is urging the public to eliminate mosquito breeding grounds and reduce contact with the little buzzers.

The department is enlisting the assistance of homeowners, day care center operators, campground operators and others to eliminate standing water at places where people are most at risk to mosquito bites.

"Mosquitos can breed in a very small amount of still water," said Commissioner Bob Crawford. He encouraged Floridians to eliminate standing water from such sources as old tires and trash can lids, and to change the water frequently in kiddie pools or birdbaths.

Especially bothersome is the Asian tiger mosquito, which came to Florida aboard boatloads of tires from Japan or Taiwan in 1986. Unlike other mosquitos found in Florida, this strain is active during daylight hours.

Crawford pointed out that state funding for mosquito control is at an all-time low, about 15 percent of last year's budget, so it's especially important for Floridians to take protective measures. Among the ways we can reduce encounters with mosquitos is to avoid mosquito-plagued areas — especially at night, reduce mosquito breeding grounds, wear protective clothing and use insect repellents.



## STAY COOL WHILE BOATING

More than 700,000 boaters in Florida can attest to pleasures of getting out on the water. But whether you're motoring, sailing, paddling, trolling or floating, the folks at Mercury Marine suggest a few precautions to keep the Florida sun from overwhelming you.

- If your boat has a top, use it for cooling shade — especially during the middle of the day. If you don't have a top, carry a white umbrella.
- An ice chest and cold drinks are must-haves for mid-summer heat relief. You also can dip a cloth into the cold water from the chest to wipe your face and hands or place on the back of your neck.
- Dump some lake or stream water over your clothing. As the water evaporates, it keeps your body cool.
- Don't forget sunscreen or protective clothing to avoid sunburn.
- Watch your passengers. If someone quits sweating or feels weak, nauseated, faint, or if his or her skin feels hot and dry, take action. Get this person into the shade and a comfortable reclining position. Cool him down with wet towels and by circulating air around him. If this doesn't help, seek medical attention.

## FUNDING FOR WETLANDS PROJECTS

Three Florida projects will receive a total of $621,955 in federal funds under the Coastal Wetland Planning, Protection and Restoration Act of 1990.

A project at Guana River will receive $30,719 to use dredged spoil to fill in mosquito drainage ditches, returning sheet flow of water to 382 acres. At Rookery Bay, a federal grant of $557,635 will help fund acquisition of coastal barrier islands with a high degree of biodiversity and unique maritime habitat types. A project at Tomoka Marsh will use $33,601 to remove a barrier berm and restore tidal flushing to a 22-acre marsh, returning the marsh to the surrounding estuary system.

The federal money comes from excise taxes or import duties on sport fishing equipment, pleasure boats and other related equipment. It will be supplemented with $633,010 in state funds. The legislation is part of the Bush Administration's "Coastal America" program, in which the U.S. Fish and Wildlife Service works with other federal agencies and state and local organizations to protect, enhance and restore coastal areas.

To qualify for federal funding, coastal states must demonstrate that a project will provide for the long-term conservation of the lands and waters involved, as well as their fish and wildlife resources.

## SEEN ANY GOOD BURROWS LATELY?

The Gopher Tortoise Council is a private, non-profit conservation organization dedicated to preserving the tortoise as well as the plants and animals associated with its natural habitat.

Among the council's efforts is the Upland Habitat Protection Project, designed to help identify and promote the acquisition of native habitats that support gopher tortoises. If you know of such habitats (large tracts, especially) in need of greater protection, or would otherwise like to support the project, you can write to the Gopher Tortoise Council, 1018 Thomasville Rd., Suite 200-C, Tallahassee, FL 32303.

— Dale Jackson
Florida Natural Areas Inventory

## WHAT GOES AROUND COMES AROUND

Before becoming part of this magazine, the pages you're reading may have been a note pad, an envelope or a computer printout. Perhaps it was scrap from another printing job.

With this issue, FLORIDA WILDLIFE begins using recycled paper. The paper used to print the text pages of this magazine is 50 percent "recovered material," of which 10 percent is "post-consumer recovered material" — two technical-sounding terms that bear explaining.

"Post-consumer recovered material" is what we commonly think of as recycled paper. It is paper that has been used by people, then removed from the waste stream — the kind of paper many of us put in the recycle bin at work. "Recovered material" describes the paper left over or trimmed during the printing process. While it may not be exactly what we think of as "used" or "recycled" paper, it is paper that was prepared for the printing process and would otherwise be thrown away.

Although recycled paper tends to cost more than virgin paper, we are pleased to be able to bring FLORIDA WILDLIFE to you on recycled paper without an increase in cost to subscribers.

You can go one step further in the recycling process. Share this issue with someone who hasn't read FLORIDA WILDLIFE.

Sea cow *(Holsteinus manatus)*

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**Wildlife Alert**

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| Lake City: | 1-800-342-8105 |
| Ocala: | 1-800-342-9620 |
| Lakeland: | 1-800-282-8002 |
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## REGIONAL OFFICES
### Florida Game & Fresh Water Fish Commission

Northwest Region
3911 Hwy. 2321
Panama City, FL 32409-1658
Telephone: (904) 265-3676

Northeast Region
Route 7, Box 440
Lake City, FL 32055-8713
Telephone: (904) 758-0525

Central Region
1239 S.W. 10th Street
Ocala, FL 32674-2723
Telephone: (904) 732-1225

South Region
3900 Drane Field Road
Lakeland, FL 33811-1299
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# Floridana

The West Indian manatee, or sea cow, (*Trichechus manatus*) is one of four species in the order Sirenia, named for the sirens or sea-nymphs of Greek and Roman mythology. According to legend, the sirens' seductive singing lured ships and sailors to their demise on treacherous, rocky reefs. Fertile imaginations transformed the hulking 10-foot long, 1,000-pound manatee and its relatives into svelte forms of mermaids.

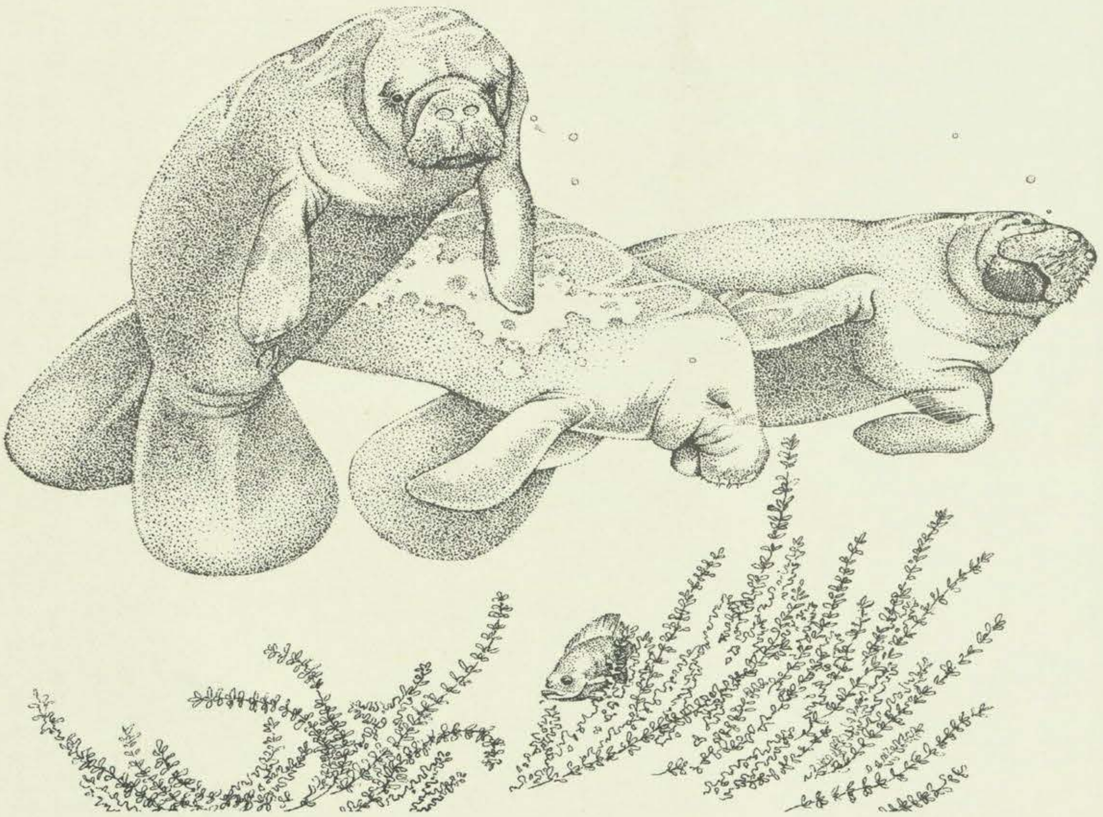
Perhaps it was the prominent teats under each flipper that encouraged the unlikely comparison, but the bulbous, whiskered face and grayish-brown, wrinkled skin of the manatee is more suggestive of a walrus or an elephant, its closest land relative, than anything else. And its placid nature is a far cry from the malevolent conduct of the mythical siren; a manatee avoids, rather than encourages, contact with humans.

Unfortunately, the manatee comes into close, often fatal contact with barges and motorboats. These conveyances crowd shallow bays, rivers and springs of Florida, which provide essential feeding and loafing habitat for this herbivore. Manatees often cannot move fast enough or find sufficient clearance to escape collision with boats. Most of the 1,200 manatees estimated to occur in Florida bear scars or deformities from these encounters.

The West Indian manatee is found from the southern United States to the northeast coast of Brazil. For thousands of years the species was hunted, but Florida law has provided protection since 1893. The manatee is now classified as endangered by the Florida Game and Fish Commission and the U.S. Fish and Wildlife Service.

Manatee sanctuaries and the enforcement of boat-speed regulations in designated areas serve to help protect the species. Warm-water discharges from power plants and other industrial sites continue to attract wintering congregations of manatees and have spawned corporate interest in manatee conservation efforts. And, unlike the sailors of yesteryear, our coexistence with this "gentle giant" is now guided by fact rather than fiction.

— Ann Morrow



Peggy Perkerson ©